



**EFFICACY DATA for
BTC[®] 885 Neutral Disinfectant Cleaner-32
(EPA Reg. No. 1839-168)**

DISINFECTION DATA:

Test Method: AOAC Use Dilution

Test Conditions: 5% organic soil load, 10 minute contact time, stainless steel carrier substrates,
400 ppm hard water, 20°C exposure temperature, 4 oz/gal dilution

Results:	<u>Test Organism</u>	<u>Sample</u>	<u>No. of Carriers</u>	
			<u>Exposed</u>	<u>Positive</u>
<i>Staphylococcus aureus</i> (ATCC 6538)		A	60	1
		B	60	1
		C	60	1
<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)		A	60	0
		B	60	0
		C	60	1
<i>Pseudomonas aeruginosa</i> PRD-10 (ATCC 15442)		A	60	0
		B	60	0
		C	60	1
Ampicillin resistant <i>Acinetobacter baumannii</i> (Fairfax Hospital CI 02001)		A	10	0
		B	10	0
Bactrim resistant <i>Acinetobacter baumannii</i> (Fairfax Hospital CI 02001)		A	10	0
		B	10	0
<i>Bordetella bronchiseptica</i> (ATCC 31437)		A	10	0
		B	10	0
Cefazolin resistant <i>Acinetobacter baumannii</i> (Fairfax Hospital CI 02001)		A	10	0
		B	10	0
Ceftazidime resistant <i>Acinetobacter baumannii</i> (Fairfax Hospital CI 02001)		A	10	0
		B	10	0
Ceftriaxone resistant <i>Acinetobacter baumannii</i> (Fairfax Hospital CI 02001)		A	10	0
		B	10	0
Ciprofloxacin resistant <i>Acinetobacter baumannii</i> (Fairfax Hospital CI 02001)		A	10	0
		B	10	0
Community Associated Methicillin Resistant <i>Staphylococcus aureus</i> (CA-MRSA) (NRS 123, Genotype USA400)		A	10	0
		B	10	0
		C	10	0
Community Associated Methicillin Resistant <i>Staphylococcus aureus</i> (CA-MRSA) (NRS 384, Genotype USA300)		A	10	0
		B	10	0
		C	10	0

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DISINFECTION DATA (continued):

<u>Test Organism</u>	<u>Sample</u>	<u>No. of Carriers</u>	
		<u>Exposed</u>	<u>Positive</u>
<i>Corynebacterium ammoniagenes</i> (ATCC 6871)	A	10	0
	B	10	0
<i>Enterobacter aerogenes</i> (ATCC 13048)	A	10	0
	B	10	0
<i>Enterobacter cloacae</i> (ATCC 23355)	A	10	0
	B	10	0
<i>Enterobacter cloacae</i> (clinical isolate)	A	10	0
	B	10	0
<i>Enterococcus faecalis</i> (ATCC 19433)	A	10	0
	B	10	0
<i>Enterococcus faecalis</i> (clinical isolate)	A	10	0
	B	10	0
<i>Escherichia coli</i> (ATCC 11229)	A	10	0
	B	10	0
<i>Escherichia coli</i> (clinical isolate)	A	10	0
	B	10	0
<i>Fusobacterium necrophorum</i> (ATCC 27852)	A	10	0
	B	10	0
Gentamicin resistant <i>Acinetobacter baumannii</i> (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
Levofloxacin resistant <i>Acinetobacter baumannii</i> (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i> (ATCC 13883)	A	10	0
	B	10	0
<i>Lactobacillus casei</i> subsp. <i>rhamnosus</i> (ATCC 7469)	A	10	0
	B	10	0
<i>Listeria monocytogenes</i> (ATCC 35152)	A	10	0
	B	10	0
Methicillin Resistant <i>Staphylococcus aureus</i> (MRSA) (ATCC 33592)	A	10	0
	B	10	0
<i>Pasteurella multocida</i> (ATCC 7707)	A	10	0
	B	10	0
<i>Proteus mirabilis</i> (ATCC 9921)	A	10	0
	B	10	0
<i>Proteus mirabilis</i> (ATCC 25933)	A	10	0
	B	10	0
<i>Proteus vulgaris</i> (ATCC 13315)	A	10	0
	B	10	0

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DISINFECTION DATA (continued):

<u>Test Organism</u>	<u>Sample</u>	<u>No. of Carriers</u>	
		<u>Exposed</u>	<u>Positive</u>
<i>Salmonella (paratyphi B) enterica</i> (ATCC 8759)	A	10	0
	B	10	0
<i>Salmonella (pullorum) enterica</i> (ATCC 9120)	A	10	0
	B	10	0
<i>Salmonella (typhi) enterica</i> (ATCC 6539)	A	10	0
	B	10	0
<i>Salmonella (typhimurium) enterica</i> (ATCC 14028)	A	10	0
	B	10	0
<i>Salmonella (enteritidis) enterica</i> (ATCC 13076)	A	10	0
	B	10	0
<i>Serratia marcescens</i> (ATCC 8100)	A	10	0
	B	10	0
<i>Shigella dysenteriae</i> (ATCC 12180)	A	10	0
	B	10	0
<i>Shigella flexneri</i> Type 2b (ATCC 12022)	A	10	0
	B	10	0
<i>Shigella sonnei</i> (ATCC 25931)	A	10	0
	B	10	0
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> (ATCC 33592)	A	10	0
	B	10	0
<i>Staphylococcus aureus</i> (clinical isolate)	A	10	0
	B	10	0
<i>Staphylococcus epidermidis</i> (ATCC 29641)	A	10	0
	B	10	0
<i>Staphylococcus epidermidis</i> (clinical isolate)	A	10	0
	B	10	0
<i>Streptococcus pyogenes</i> Group A (ATCC 19615)	A	10	0
	B	10	0
<i>Streptococcus pyogenes</i> (clinical-flesh eating strain, BIRD M3)	A	10	0
	B	10	0
Tobramycin resistant <i>Acinetobacter baumannii</i> (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
Vancomycin Resistant <i>Enterococcus faecalis</i> (VRE) (ATCC 51575)	A	10	0
	B	10	0
Vancomycin Intermediate Resistant <i>Staphylococcus aureus</i> (VISA) (HIP-5836)	A	10	0
	B	10	0
<i>Xanthomonas maltophilia</i> (clinical isolate)	A	10	0
	B	10	0
<i>Xanthomonas axonopodis</i> pathovar <i>citri</i> @ a dilution ratio of 1:13.5 (2000 ppm active quaternary)	A	10	0
	B	10	0

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DISINFECTION DATA (continued):

Conclusion: Under the conditions of these investigations, BTC® 885 Neutral Disinfectant Cleaner-32 demonstrated **disinfectant** activity against *Staphylococcus aureus*, *Salmonella (choleraesuis) enterica*, *Pseudomonas aeruginosa* PRD-10, Ampicillin resistant *Acinetobacter baumannii*, Bactrim resistant *Acinetobacter baumannii*, *Bordetella bronchiseptica*, Cefazolin resistant *Acinetobacter baumannii*, Ceftazidime resistant *Acinetobacter baumannii*, Ceftriaxone resistant *Acinetobacter baumannii*, Ciprofloxacin resistant *Acinetobacter baumannii*, Community Associated Methicillin Resistant *Staphylococcus aureus* (CA-MRSA) (NRS 123, Genotype USA400), Community Associated Methicillin Resistant *Staphylococcus aureus* (CA-MRSA) (NRS384, Genotype USA300), *Corynebacterium ammoniagenes*, *Enterobacter aerogenes*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Escherichia coli*, *Fusobacterium necrophorum*, Gentamicin resistant *Acinetobacter baumannii*, Levofloxacin resistant *Acinetobacter baumannii*, *Klebsiella pneumoniae* subsp. *pneumoniae*, *Lactobacillus casei* subsp. *rhamnosus*, *Listeria monocytogenes*, Methicillin Resistant *Staphylococcus aureus* (MRSA), *Pasteurella multocida*, *Proteus mirabilis* (ATCC 9921), *Proteus mirabilis* (ATCC 25933), *Proteus vulgaris*, *Salmonella (paratyphi B) enterica*, *Salmonella (pullorum) enterica*, *Salmonella (typhi) enterica*, *Salmonella (typhimurium) enterica*, *Salmonella (enteritidis) enterica*, *Serratia marcescens*, *Shigella dysenteriae*, *Shigella flexneri* Type 2b, *Shigella sonnei*, *Staphylococcus aureus* subsp. *aureus*, *Staphylococcus epidermidis*, *Streptococcus pyogenes* Group A, *Streptococcus pyogenes* (clinical-flesh eating strain, BIRD M3), Tobramycin resistant *Acinetobacter baumannii*, Vancomycin Resistant *Enterococcus faecalis* (VRE), and Vancomycin Intermediate Resistant *Staphylococcus aureus* (VISA), according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a bactericide.

BTC® 885 Neutral Disinfectant Cleaner-32 also demonstrated disinfectant activity against the following antibiotic resistant clinical isolates: *Enterobacter cloacae*, *Enterococcus faecalis*, *Escherichia coli*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, and *Xanthomonas maltophilia*.

At a dilution ratio of 1:13.5 (2000 ppm active quaternary), BTC® 885 Neutral Disinfectant Cleaner-32 demonstrated disinfectant activity against *Xanthomonas axonopodis* pathovar *citri* (Citrus Canker Disease).

FUNGICIDAL DATA:

Test Method: AOAC Fungicidal Activity of Disinfectants

Test Conditions: 5% organic soil load, 20°C exposure temperature, 200 ppm hard water, 4 oz/gal dilution

Results:

<u>Test Organism</u>	<u>Sample</u>	<u>Exposure Time (min.) vs. Growth</u>		
		<u>5</u>	<u>10</u>	<u>15</u>
<i>Trichophyton mentagrophytes</i> (ATCC 9533)	A	+	0	0
	B	+	0	0
<i>Candida albicans</i> (ATCC 10231)	A	0	0	0
	B	0	0	0

Conclusions: Under the conditions of this investigation, BTC® 885 Neutral Disinfectant Cleaner-32 demonstrated **fungicidal** activity against *Trichophyton mentagrophytes* and *Candida albicans* according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a fungicide.



VIRUCIDAL DATA:

Test Methods:

* U.S. E.P.A. Pesticide Assessment Guidelines, Subdivision G: Product Performance, Section 91-2 (f), and Section 91-30, (d), (e), November 1982.

† Protocols for Testing the Efficacy of Disinfectants against Hepatitis B Virus (HBV) (EPA, Federal Register, Vol. 65, No. 166, 8/25/2000, p. 51828).

‡ Protocol for Testing Disinfectants against Hepatitis C Virus using Bovine Viral Diarrhea Virus as approved by the U.S. EPA on August 15, 2002.

Test Conditions: 10 minute contact time, 5% organic soil load, sterile glass petri dishes, 400 ppm hard water, 21-24°C exposure temperature, 4 oz/gal dilution

Results:

<u>Test Organism</u>	<u>Sample</u>	<u>Titer Reduction</u>
*Avian Influenza A Virus (H3N2) (Avian Ressorant) (ATCC VR-2072)	A	≥4.25 log ₁₀
	B	≥4.25 log ₁₀
*Avian Influenza Virus, Type A (Turkey/WIS/66) (H9N2)	A	≥4.0 log ₁₀
	B	≥4.0 log ₁₀
*Bovine Rhinotracheitis, strain LA (ATCC VR-188)	A	≥5.0 log ₁₀
	B	≥5.0 log ₁₀
‡Bovine Viral Diarrhea Virus (BVDV)	A	5.9 log ₁₀
	B	5.9 log ₁₀
*Canine Distemper Virus, strain Lederle (ATCC VR-128)	A	≥6.25 log ₁₀
	B	≥6.25 log ₁₀
*Feline Picornavirus, strain FRV (ATCC VR-649)	A	≥4.25 log ₁₀
	B	≥4.25 log ₁₀
†Hepatitis B Virus (HBV) (Duck Hepatitis B Virus-DHBV)	A	4.5 log ₁₀
	B	4.7 log ₁₀
‡Hepatitis C Virus (HCV) (Bovine Viral Diarrhea Virus-BVDV)	A	5.9 log ₁₀
	B	5.9 log ₁₀
*Herpes Simplex Type 1 (ATCC VR-260)	A	≥5.0 log ₁₀
	B	≥5.0 log ₁₀
*Herpes Simplex Type 2 (ATCC VR-734)	A	≥6.0 log ₁₀
	B	≥6.0 log ₁₀
*Human Coronavirus (ATCC VR-740, strain 229E)	A	≥3.0 log ₁₀
	B	≥3.0 log ₁₀
*Human Immunodeficiency Virus, HTLV-III _{RF} , strain of HIV-1 (associated with AIDS)	A	≥3.5 log ₁₀
	B	≥3.5 log ₁₀
*Human Immunodeficiency Virus type 2 (HIV-2), strain CBL-20	A	≥3.25 log ₁₀
	B	≥3.25 log ₁₀
*Influenza A ₂ , strain Hong Kong (ATCC VR-544)	A	≥4.25 log ₁₀
	B	≥4.25 log ₁₀
*Pandemic 2009 H1N1 Influenza A Virus	(Refer to NOTE on next page.)	
*Paramyxovirus (Mumps) (ATCC VR-1438)	A	≥3.0 log ₁₀
	B	≥3.0 log ₁₀
*Porcine Respiratory & Reproductive Syndrome Virus (PRRSV), strain NVSL	A	≥5.0 log ₁₀
	B	≥5.0 log ₁₀
*Pseudorabies, strain Aujeszky (ATCC VR-135)	A	≥5.25 log ₁₀
	B	≥5.25 log ₁₀

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VIRUCIDAL DATA (CONTINUED):

<u>Test Organism</u>	<u>Sample</u>	<u>Titer Reduction</u>
*Rabies Virus (attenuated CDC ERA strain)	A	3.0 log ₁₀
	B	3.0 log ₁₀
*Rotavirus, strain SA-11 (ATCC VR-899)	A	4.5 log ₁₀
	B	4.5 log ₁₀
*SARS Associated Coronavirus (ZeptoMetrix)	A	3.03 log ₁₀
	B	3.03 log ₁₀
*Vaccinia, strain WR (ATCC VR-119)	A	≥5.5 log ₁₀
	B	≥5.5 log ₁₀

Conclusion: Under the conditions of this investigation, BTC® 885 Neutral Disinfectant Cleaner-32 demonstrated **virucidal** activity against Avian Influenza A Virus (H3N2), Avian Influenza Virus, Type A (H9N2), Bovine Rhinotracheitis, Bovine Viral Diarrhea Virus (BVDV), Canine Distemper Virus, Feline Picornavirus, Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), Herpes Simplex Type 1, Herpes Simplex Type 2, Human Coronavirus, Human Immunodeficiency Virus (HIV-1), Human Immunodeficiency Virus Type 2 (HIV-2), Influenza A₂, Pandemic 2009 H1N1 Influenza A Virus, Paramyxovirus (Mumps), Porcine Respiratory & Reproductive Syndrome Virus (PRRSV), Pseudorabies, Rabies Virus, Rotavirus, SARS Associated Coronavirus and Vaccinia according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a virucide.

NOTE: Per the EPA guidance document dated October 21, 2009, disinfectant products that bear label claims against human, avian, or swine influenza A virus, and have submitted and received approval of efficacy data to support these label claims, may include a label claim against the Pandemic 2009 H1N1 Influenza A Virus.

MILDEW FUNGISTATIC DATA:

Test Method: Hard Surface Mildew Fungistatic Test

Test Organism: *Aspergillus niger* (ATCC 6275)

Test Conditions: 400 ppm hard water, ceramic tile carriers, 4 oz/gal dilution

Results:

<u>Sample</u>	<u>No. of Exposed Tiles</u>	<u>No. of Tiles Showing Growth</u>
A	10	0
B	10	0
Control	10	10

Conclusion: Under the conditions of this investigation, BTC® 885 Neutral Disinfectant Cleaner-32 demonstrated **fungistatic** activity against *Aspergillus niger* according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a fungistat.



BACTERICIDAL STABILITY DATA OF USE-SOLUTION:

Test Method: Use Dilution

Test Conditions: 5% organic soil load, 10 minute contact time, stainless steel carrier substrates, 400 ppm hard water, 20°C exposure temperature, 4 oz/gal dilution

Storage Conditions: sealed containers at room temperature

Results:

Test Time	Sample	Test Organism	No. of Carriers	
			Exposed	Positive
Zero Time	A	<i>Staphylococcus aureus</i> (ATCC 6538)	10	0
		<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)	10	0
		<i>Pseudomonas aeruginosa</i> (ATCC 15442)	10	0
	B	<i>Staphylococcus aureus</i> (ATCC 6538)	10	0
		<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)	10	0
		<i>Pseudomonas aeruginosa</i> (ATCC 15442)	10	0
Week 1	A	<i>Staphylococcus aureus</i> (ATCC 6538)	10	0
		<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)	10	0
		<i>Pseudomonas aeruginosa</i> (ATCC 15442)	10	0
	B	<i>Staphylococcus aureus</i> (ATCC 6538)	10	0
		<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)	10	0
		<i>Pseudomonas aeruginosa</i> (ATCC 15442)	10	0
Week 2	A	<i>Staphylococcus aureus</i> (ATCC 6538)	10	0
		<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)	10	0
		<i>Pseudomonas aeruginosa</i> (ATCC 15442)	10	0
	B	<i>Staphylococcus aureus</i> (ATCC 6538)	10	0
		<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)	10	0
		<i>Pseudomonas aeruginosa</i> (ATCC 15442)	10	0
Week 3	A	<i>Staphylococcus aureus</i> (ATCC 6538)	10	0
		<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)	10	0
		<i>Pseudomonas aeruginosa</i> (ATCC 15442)	10	0
	B	<i>Staphylococcus aureus</i> (ATCC 6538)	10	0
		<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)	10	0
		<i>Pseudomonas aeruginosa</i> (ATCC 15442)	10	0
Week 4	A	<i>Staphylococcus aureus</i> (ATCC 6538)	10	0
		<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)	10	0
		<i>Pseudomonas aeruginosa</i> (ATCC 15442)	10	0
	B	<i>Staphylococcus aureus</i> (ATCC 6538)	10	0
		<i>Salmonella (choleraesuis) enterica</i> (ATCC 10708)	10	0
		<i>Pseudomonas aeruginosa</i> (ATCC 15442)	10	0

Conclusion: The results of this investigation show that a 4 oz/gal use dilution of BTC® 885 Neutral Disinfectant Cleaner-32 will demonstrate disinfectant efficacy against *Staphylococcus aureus*, *Salmonella (choleraesuis) enterica*, and *Pseudomonas aeruginosa* for up to 4 weeks in accordance with criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a bactericide.