



## Neutral Disinfectant



E23

S23

**Buckeye Eco Neutral Disinfectant** is a multi-purpose, neutral pH, broad-spectrum germicidal detergent designed for use in hospital, healthcare and industrial settings at ½ oz. and 2 oz. per gallon of water. **Buckeye Eco Neutral Disinfectant** is ideal for routine germicidal cleaning and floor care maintenance. With a use-dilution pH of  $7.0 \pm 0.2$ , **Buckeye Eco Neutral Disinfectant** will not attack floor finish.

Special detergents effectively remove dirt and soil without harming the finish. **Buckeye Eco Neutral Disinfectant** requires no rinsing. This means more time may pass between labor intensive stripping and recoating procedures.

Use **Buckeye Eco Neutral Disinfectant** on most hard, nonporous surfaces in:

- Nursing Homes
- Hospitals
- Healthcare Facilities
- Schools and Colleges
- Office Buildings
- Public Facilities
- Hotels
- Exercise Facilities



### FEATURES

- Disinfectant
- Bactericidal
- Virucidal\*
- Fungicidal
- Mildewstatic
- EPA registered
- Disinfects, cleans, and deodorizes in one labor-saving step
- pH neutral
- Effective in hard water up to 200 ppm [calculated as  $\text{CaCO}_3$ ] in the presence of a moderate amount of soil [5% organic serum] according to the AOAC Use-Dilution Test
- Use on all hard, nonporous surfaces

Effectively kills: • HIV-1 (AIDS Virus) • Hepatitis B Virus (HBV) • Hepatitis C Virus (HCV) • Herpes Simplex Virus Type 1 & 2 • Rubella (German Measles) • Influenza A Virus/Hong Kong • Vaccinia • Adenovirus • Vancomycin resistant Enterococcus faecalis (VRE) • Methicillin resistant Staphylococcus aureus (MRSA) • Community Associated Methicillin-Resistant Staphylococcus aureus (CA-MRSA) • Gram-negative & Gram-positive pathogens • Trichophyton Mentagrophytes (Athlete's Foot Fungus)

### 1.25 L Bag Yield Rate

½ oz./gal. (1:256) makes 84 end-use gallons, which is equivalent to:



**Each 4x1 case makes 338 end-use gallons**

2 oz./gal. (1:64) makes 21 end-use gallons, which is equivalent to:



**Each 4x1 case makes 338 end-use quarts**

### 0.95 L Squeeze & Pour Yield Rate

½ oz./gal. (1:256) makes 64 end-use gallons, which is equivalent to:



**Each 6x1 case makes 384 end-use gallons**

2 oz./gal. (1:64) makes 16 end-use gallons, which is equivalent to:



**Each 6x1 case makes 384 end-use quarts**

## Bactericidal Gram-Negative

Bactericidal against several gram-negative pathogens, according to the **AOAC Use Dilution Test** (current edition), modified in the presence of 5% organic serum and 400 ppm water hardness (calculated as  $\text{CaCO}_3$ ). Dilution 1:256.

Organism	Sample	# Carriers	# of Positives	Neutralization Control
Pseudomonas aeruginosa	A	60	0	+
	B	60	0	+
	C	60	0	+
Salmonella enterica	A	60	0	+
	B	60	0	+
	C	60	0	+
Legionella pneumophila	A	10	0	+
	B	10	0	+
Acinetobacter calcoaceticus	A	10	0	+
	B	10	0	+
Chlamydia psittaci	A	10	0	+
	B	10	0	+
Enterobacter aerogenes	A	10	0	+
	B	10	0	+
Enterobacter cloacae	A	10	0	+
	B	10	0	+
Fusobacterium necrophorum	A	10	0	+
	B	10	0	+
Salmonella typhimurium	A	10	0	+
	B	10	0	+
Salmonella typhi	A	10	0	+
	B	10	0	+
Salmonella enteritidis	A	10	0	+
	B	10	0	+
Klebsiella pneumoniae	A	10	0	+
	B	10	0	+
Proteus vulgaris	A	10	0	+
	B	10	0	+
Proteus mirabilis	A	10	0	+
	B	10	0	+
Serratia marcescens	A	10	0	+
	B	10	0	+
Shigella flexneri	A	10	0	+
	B	10	0	+
Shigella sonnei	A	10	0	+
	B	10	0	+
Escherichia coli	A	10	0	+
	B	10	0	+
Listeria monocytogenes	A	10	0	+
	B	10	0	+
Pasteurella multocida	A	10	0	+
	B	10	0	+

## Bactericidal Gram-Positive

Bactericidal against several gram-positive pathogens, according to the **AOAC Use Dilution Test** (current edition), modified in the presence of 5% organic serum and 400 ppm water hardness (calculated as  $\text{CaCO}_3$ ). Dilution 1:256.

Organism	Sample	# Carriers	# of Positives	Neutralization Control
Staphylococcus aureus	A	60	0	+
	B	60	0	+
	C	60	0	+
Streptococcus pyogenes	A	10	0	+
	B	10	0	+
Streptococcus faecalis	A	10	0	+
	B	10	0	+

## Bactericidal Antibiotic Resistant

**Buckeye Eco Neutral Disinfectant** is also bactericidal against the following antibiotic resistant bacteria, according to the **AOAC Use Dilution Test**, in hard water up to 200 ppm (calculated as  $\text{CaCO}_3$ ) in the presence of 5% organic serum. Dilution 1:256.

- Enterococcus faecalis (Vancomycin Resistant) (VRE)
- Escherichia coli
- Klebsiella pneumoniae
- Pseudomonas aeruginosa
- Community Associated Methicillin - Resistant Staphylococcus aureus (CA-MRSA)
- Staphylococcus aureus (Methicillin Resistant [MRSA], Vancomycin Intermediate Resistant [VISA] and other antibiotic resistant strains)
- Staphylococcus epidermidis
- Streptococcus faecalis

## Virucidal\*

**Buckeye Eco Neutral Disinfectant** acts as a virucidal against:

Adenovirus Type 4  
 Adenovirus Type 7 at 2 oz per gallon  
 Hepatitis B Virus (HBV)  
 Hepatitis C Virus (HCV)  
 Herpes Simplex Virus Type 2  
 Herpes Simplex Virus Type 1  
 HIV-1 (AIDS Virus)  
 Human Coronavirus  
 Influenza Virus Type A/Hong Kong  
 Respiratory Syncytial Virus (RSV)  
 Rotavirus  
 Rubella (German Measles)  
 Vaccinia (Pox Virus)

according to the **Virucidal Qualification Test**, modified in the presence of 5% organic serum and 400 ppm water hardness (calculated as  $\text{CaCO}_3$ ). Dilution 1:256.

**Note:** + = Virus present; 0 = No Virus present; T = Toxic

## Herpes Simplex Virus Type 2; MS Strain

Serial Dilutions (Test Virus in 5% V/V Organic Biostress Load)	Treated Diluted with 400 ppm Hard Water	Untreated Test Virus Untreated Control	Cytotoxicity Control
$10^{-1}$	T000	++++	T000
$10^{-2}$	0000	++++	0000
$10^{-3}$	0000	++++	0000
$10^{-4}$	0000	++++	0000
$10^{-5}$	0000	++++	0000
$10^{-6}$	0000	++++	0000
$10^{-7}$	0000	++++	0000
$10^{-8}$	0000	++++	0000

Conclusion: **Buckeye Eco Neutral Disinfectant** effectively inactivated the test virus, Herpes Simplex Virus Type 2.

## Virucidal\*

### Herpes Simplex Virus Type 1; VR-733 Hominis

Serial Dilutions (Test Virus in 5% V/V Organic Biostress Load)	Treated Diluted with 400 ppm Hard Water	Untreated Test Virus Untreated Control	Cytotoxicity Control
10 <sup>-1</sup>	0000	++++	0000
10 <sup>-2</sup>	0000	++++	0000
10 <sup>-3</sup>	0000	++++	0000
10 <sup>-4</sup>	0000	++++	0000
10 <sup>-5</sup>	0000	++++	0000
10 <sup>-6</sup>	0000	++++	0000
10 <sup>-7</sup>	0000	++++	0000
10 <sup>-8</sup>	0000	+000	0000

Conclusion: **Buckeye Eco Neutral Disinfectant** effectively inactivated the test virus, Herpes Simplex Virus Type 1.

### Influenza Virus Type A; Hong Kong/68-H3N2

Serial Dilutions (Test Virus in 5% V/V Organic Biostress Load)	Treated Diluted with 400 ppm Hard Water	Untreated Test Virus Untreated Control	Cytotoxicity Control
10 <sup>-1</sup>	0000	++++	0000
10 <sup>-2</sup>	0000	++++	0000
10 <sup>-3</sup>	0000	++++	0000
10 <sup>-4</sup>	0000	++++	0000
10 <sup>-5</sup>	0000	++++	0000
10 <sup>-6</sup>	0000	++++	0000
10 <sup>-7</sup>	0000	++++	0000
10 <sup>-8</sup>	0000	++++	0000

Conclusion: **Buckeye Eco Neutral Disinfectant** effectively inactivated the test virus, Influenza Virus, Type A.

### Adenovirus Type 4; Strain RI-67

Serial Dilutions (Test Virus in 5% V/V Organic Biostress Load)	Treated Diluted with 400 ppm Hard Water	Untreated Test Virus Untreated Control	Cytotoxicity Control
10 <sup>-1</sup>	0000	++++	0000
10 <sup>-2</sup>	0000	++++	0000
10 <sup>-3</sup>	0000	++++	0000
10 <sup>-4</sup>	0000	++++	0000
10 <sup>-5</sup>	0000	++++	0000
10 <sup>-6</sup>	0000	0000	0000
10 <sup>-7</sup>	0000	0000	0000
10 <sup>-8</sup>	0000	0000	0000

Conclusion: **Buckeye Eco Neutral Disinfectant** effectively inactivated the test virus, Adenovirus, Type 4.

### Vaccinia Virus; IHD Strain

Serial Dilutions (Test Virus in 5% V/V Organic Biostress Load)	Treated Diluted with 400 ppm Hard Water	Untreated Test Virus Untreated Control	Cytotoxicity Control
10 <sup>-1</sup>	0000	++++	0000
10 <sup>-2</sup>	0000	++++	0000
10 <sup>-3</sup>	0000	++++	0000
10 <sup>-4</sup>	0000	++++	0000
10 <sup>-5</sup>	0000	++++	0000
10 <sup>-6</sup>	0000	++++	0000
10 <sup>-7</sup>	0000	++++	0000
10 <sup>-8</sup>	0000	0000	0000

Conclusion: **Buckeye Eco Neutral Disinfectant** effectively inactivated the test virus, Vaccinia.

### Rubella (German Measles) Virus; Strain M-33

Serial Dilutions (Test Virus in 5% V/V Organic Biostress Load)	Treated Diluted with 400 ppm Hard Water	Untreated Test Virus Untreated Control	Cytotoxicity Control
10 <sup>-1</sup>	0000	++++	T000
10 <sup>-2</sup>	0000	++++	0000
10 <sup>-3</sup>	0000	++++	0000
10 <sup>-4</sup>	0000	++++	0000
10 <sup>-5</sup>	0000	++++	0000
10 <sup>-6</sup>	0000	0000	0000
10 <sup>-7</sup>	0000	0000	0000
10 <sup>-8</sup>	0000	0000	0000

Conclusion: **Buckeye Eco Neutral Disinfectant** effectively inactivated the test virus, Rubella.

**Note:** + = Virus present; 0 = No Virus present; T = Toxic

## Fungicidal

Fungicidal against Trichophyton mentagrophytes (Athlete's Foot fungus), Candida albicans (Yeast) and Aspergillus niger (aspergillosis, pneumonia, skin infections, ear infections) according to the **AOAC Fungicidal Test** (current edition), modified in the presence of 5% organic serum and 400 ppm water hardness (calculated as CaCO<sub>3</sub>). Dilution 1:256.

Organism	# Carriers	# of Positives	Control
Trichophyton mentagrophytes	20	0	+
Candida albicans	20	0	+
Aspergillus niger	20	0	+

RESEARCH FACTS

## RESEARCH FACTS (Continued)

### Human Immunodeficiency Virus (HIV-1)

Evaluation of **Buckeye Eco Neutral Disinfectant** for virucidal efficacy against dried virus (5% organic soil load) after a four- minute exposure to a 1:256 dilution in synthetic hard water (400 ppm).

#### CPE Assay with MT2 Cells (Day 7)

Cytopathic-Cytotoxic Effects (No. Positive/No. Inoculated)

Dilution Inoculated	Virus Control	Sample + Virus		Non-Virucidal Level of Disinfectant		Cytotoxicity Controls	
		Lot A	Lot B	Lot A	Lot B	Lot A	Lot B
10 <sup>-1</sup>	4/4	Toxic	Toxic	Toxic	Toxic	4/4	4/4
10 <sup>-2</sup>	4/4	Toxic	Toxic	Toxic	Toxic	4/4	4/4
10 <sup>-3</sup>	4/4	0/4	0/4	4/4	4/4	0/4	0/4
10 <sup>-4</sup>	4/4	0/4	0/4	4/4	4/4	0/4	0/4
10 <sup>-5</sup>	4/4	a	a	4/4	4/4	a	a
10 <sup>-6</sup>	2/4	a	a	0/4	0/4	a	a
Virus Titer (-Log <sub>10</sub> TCID <sub>50</sub> )	6.0	≤2.5	≤2.5	5.5	5.5		
Cytotoxicity Titer (-Log <sub>10</sub> TCID <sub>50</sub> )						2.5	2.5
Reduction of Virus Titer by test sample (-Log <sub>10</sub> TCID <sub>50</sub> )		≥3.5	≥3.5				

**Note:** a = Virus not tested

Conclusion: **Buckeye Eco Neutral Disinfectant** demonstrated virucidal activity against HIV-1 (AIDS Virus) in the CPE assay with MT2 cells.

Eco Neutral Disinfectant Technical Specifications	
pH in concentrate	7.6 ± 0.2
pH 2 oz./gal. (1:64)	6.8 ± 0.2
pH ½ oz./gal. (1:256)	7.0 ± 0.2
Weight/Gallon	8.31 lbs
Specific Gravity	0.998
Biodegradable	Yes
Color	Lemon Zest
Fragrance	Clean Linen
Active Concentration	660 ppm
Active Disinfectant:	
Didecyl dimethyl ammonium chloride.....10.14%	
n-Alkyl (C <sub>14</sub> 50%, C <sub>12</sub> 40%, C <sub>16</sub> 10%)	
dimethyl benzyl ammonium chloride..... 6.76%	
<b>Inert Ingredients.....83.10%</b>	

## Directions for Use

**DIRECTIONS:** Disinfects, cleans, and deodorizes the following hard, nonporous, inanimate surfaces: floors, walls, (non-medical) metal surfaces, (non-medical) stainless steel surfaces, glazed porcelain, and plastic surfaces such as polypropylene, polystyrene, etc. Remove heavy soil deposits from surface. Then thoroughly wet surface with a use-solution of ½ ounce of the concentrate per gallon of water or equivalent. (Use 2 oz. per gallon of water to kill Adenovirus Type 7.) The use-solution can be applied with a cloth, mop, sponge, or coarse spray, or soaking. For sprayer applications, use a coarse spray device. Spray 6–8 inches from the surface, rub with a brush, cloth or sponge. Do not breathe spray. Let solution remain on surface for a minimum of 10 minutes. Rinse or allow to air dry. Rinsing of floors is not necessary unless they are to be waxed or polished. Food contact surfaces must be thoroughly rinsed with potable water. This product must not be used to clean the following food contact surfaces: utensils, glassware and dishes. Prepare a fresh solution daily or more often if the solution becomes visibly dirty or diluted.

#### 0.95 L Squeeze & Pour Bottles (S23)—User Instructions:

##### **For mop and bucket applications:**

Add 1 oz. **per prefilled 2 gallons water**

##### **For Eco 32 oz. trigger spray bottle:**

Add ½ oz. **per prefilled Eco trigger spray bottle**

Available in:



1.25 L  
bags



0.95 L  
squeeze  
& pour  
bottles

#### Connecting 1.25 L Bags to Eco Unit

1. Remove 1.25 L bag from carton.
2. To open the Eco unit product compartment, depress the top of the unit with your fingers and pull the compartment down towards you with your other hand.
3. Align Eco unit connector cap lugs with 1.25 L bag metering plug channels. Rotate clockwise to lock in place.
4. Fit 1.25 L bag neatly into product compartment with hose barb pointed downward.  
*\*Ensure chemical line is not pinched.*
5. Close Eco unit product compartment.

#### Dispensing Diluted Product into 32 oz. Trigger Spray Bottle

1. Use appropriate 32 oz. trigger spray bottle, and slide up over 5-inch discharge hose.
2. Push back lever to dispense diluted product.
3. Once trigger spray bottle is filled (approximately 2 inches from top), release lever to avoid overfilling.

#### Dispensing Diluted Product into Mop and Bucket/Other Equipment

1. Position Eco unit discharge hose into mop bucket or other equipment.
2. Press green button below appropriate product to dispense diluted product.
3. For hands-free operation, push the appropriate green button once to dispense diluted product. Once filled, push the button again to stop product flow.



**Buckeye International, Inc.**

2700 Wagner Place • Maryland Heights • MO 63043 • 800.321.2583

www.buckeyeinternational.com