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## **EFFICACY DATA for Xtreme Detergent/Disinfectant (EPA Reg. No. PENDING)**

### ***VIRUCIDAL DATA***

#### **Testing Methods**

\* U.S. E.P.A. Pesticide Assessment Guidelines, Subdivision G: Product Performance, 1982, Section 91-30, pp. 72-76.

† Virucide Assay (EPA, Federal Register 10, No. 123, 6/25/75, p. 26836)

. 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:** 2 oz. Per gallon of water dilution, 10 minute contact time, tested in the presence of serum glass petri dish substrates

#### **Results**

Test Organism

Sample

Titer Reduction

†Adenovirus Type 2 A B 3.0 log<sub>10</sub>>3.0 log<sub>10</sub>

\*Avian Influenza A Virus (H3N2) (Avian Ressorant) (ATCC VR-2072) A B >3.5 log<sub>10</sub>>3.5 log<sub>10</sub>

\*Avian Influenza Virus, Type A (Turkey/WIS/66) (H9N2) A B >4.5 log<sub>10</sub>>4.5 log<sub>10</sub>

‡Bovine Viral Diarrhea Virus (BVDV) A B 6.1 log<sub>10</sub> 3.8 log<sub>10</sub>

\*Feline Calicivirus (FCV) A B 5.79 log<sub>10</sub>>6.06 log<sub>10</sub>

.Hepatitis B Virus (HBV) (Duck Hepatitis B Virus-DHBV) A B 4.5 log<sub>10</sub> 4.5 log<sub>10</sub>

‡Hepatitis C Virus (HCV) (Bovine Viral Diarrhea Virus-BVDV) A B 6.1 log<sub>10</sub> 3.8 log<sub>10</sub>

†Herpes Simplex Type 1 (Sabin) A B >4.0 log<sub>10</sub>>3.7 log<sub>10</sub>

\*Human Coronavirus (ATCC VR-740, strain 229E) A B >3.0 log<sub>10</sub>>3.0 log<sub>10</sub>

\*Human Immunodeficiency Virus, HTLV-III<sub>RF</sub>, strain of HIV-1

(associated with AIDS)

A B >3.0 log<sub>10</sub>>3.0 log<sub>10</sub>

†Influenza A<sub>2</sub> (Japan 305/57) A B >6.5 log<sub>10</sub>>6.0 log<sub>10</sub>

\*Norovirus (Norwalk Virus) (FCV) A B 5.79 log<sub>10</sub>>6.06 log<sub>10</sub>

\*SARS Associated Coronavirus (ZeptoMetrix) A B 4.03 log<sub>10</sub> 4.03 log<sub>10</sub>

†Vaccinia (Wyeth) A B >3.5 log<sub>10</sub>>3.5 log<sub>10</sub>

### Conclusion

Under the conditions of this investigation, Xtreme Detergent/Disinfectant was **virucidal** for Adenovirus Type 2, Avian Influenza A Virus (H3N2), Avian Influenza Virus Type A (H9N2), Bovine Viral Diarrhea Virus (BVDV), Feline Calicivirus (FCV), Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), Herpes Simplex Type 1 (Sabin), Human Coronavirus, Human Immunodeficiency Virus (HIV-1), Influenza A<sub>2</sub> (Japan 305/57), Norovirus (Norwalk Virus), SARS Associated Coronavirus and Vaccinia (Wyeth) according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a virucide.

### ***MILDEW FUNGISTATIC DATA***

#### Testing Method

Hard Surface Mildew Fungistatic Test (Unofficial Protocol, 10/27/76)

**Test Organism:** *Aspergillus niger* (ATCC 6275)

**Test Conditions:** tile substrates

#### Results

Sample Dilution No. of Exposed Tiles No. of Tiles Showing Growth

Xtreme Detergent/Disinfectant oz/gal 10 0

Control - 10 10

#### Conclusion

Under the conditions of this investigation, Xtreme Detergent/Disinfectant was **fungistatic** for *Aspergillus niger* according to criteria established by the U. S. Environmental Protection Agency for registration and labeling of a disinfectant product as a fungistat.

### ***FUNGICIDAL DATA***

#### Test Method

AOAC Fungicidal Test

**Test Organism:** *Trichophyton mentagrophytes* (ATCC 9533)

**Test Conditions:** 2 oz/gal dilution

5% organic soil load

20°C exposure temperature

**Results**

Exposure Time  
(min.) vs. Growth  
Sample 5 10 15  
A  
B  
+  
+  
0  
0  
0  
0

**Conclusion**

Under the conditions of this investigation, Xtreme Detergent/Disinfectant was **fungicidal** for *Trichophyton mentagrophytes* according to criteria established by the U. S. Environmental Protection Agency for registration and labeling of a disinfectant product as a fungicide.

***DISINFECTION DATA***

**Test Method**

AOAC Use Dilution

**Test Conditions:** 5% organic soil load, 10 minute contact time, stainless steel carrier substrates, 20°C exposure temperature, 2 oz/gal dilution

**Results**

No. of Carriers  
Test Organism Sample Exposed Positive  
*Staphylococcus aureus* (ATCC 6538) A  
B  
C  
60  
60  
60  
0  
0  
0  
*Salmonella choleraesuis* (ATCC 10708) A  
B  
C  
60  
60  
60  
0  
0  
0

*Pseudomonas aeruginosa* (ATCC 15442) A

B

C

60

60

60

0

0

0

*Brevibacterium ammoniagenes* (ATCC 6871) A

B

10

10

0

0

*Enterobacter aerogenes* (ATCC 13048) A

B

10

10

0

0

*Escherichia coli* (ATCC 11229) A

B

10

10

0

0

*Klebsiella pneumoniae* (ATCC 4352) A

B

10

10

0

0

*Listeria monocytogenes* (ATCC 984) A

B

10

10

0

0

Methicillin resistant *Staphylococcus aureus* (MRSA) (ATCC 33593) A

B

10

10

0

0

*Salmonella schottmuelleri* (ATCC 8759) A

B

10

10

0

0

*Shigella dysenteriae* (ATCC 12180) A

B

10

10

0

0

*Streptococcus faecalis* (ATCC 10541) A

B

10

10

0

0

*Streptococcus pyogenes* (Clinical-Flesh Eating Strain, BIRD M3) A

B

10

10

0

0

*Streptococcus salivarius* (ATCC 9222) A

B

10

10

0

0

Vancomycin intermediate resistant *Staphylococcus aureus* (VISA) A

B

10

10

0

0

### Conclusion

Under the conditions of these investigations, Xtreme Detergent/Disinfectant demonstrated **disinfectant** activity against *Staphylococcus aureus*, *Salmonella choleraesuis*, *Pseudomonas aeruginosa*, *Brevibacterium ammoniagenes*, *Enterobacter aerogenes*, *Escherichia coli*, *Klebsiella pneumoniae*, *Listeria monocytogenes*, Methicillin resistant *Staphylococcus aureus* (MRSA), *Salmonella schottmuelleri*, *Shigella dysenteriae*, *Streptococcus faecalis*, *Streptococcus pyogenes* (Clinical – Flesh Eating Strain, BIRD M3), *Streptococcus salivarius* 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.

## SANITIZATION DATA

### Test Method

AOAC Germicidal and Detergent Sanitizing Action of Disinfectants

**Test Conditions:** 200 ppm active quaternary

2 oz/3.5 gal dilution

Results

TOTAL BACTERIAL COUNTS/

% KILL vs. EXPOSURE TIME

Synthetic

Hard Water

30 seconds

60 seconds

Test Organism Sample (ppm) TBC \* % Kill† TBC \* % Kill†

*Staphylococcus aureus*

(ATCC 6538)

A

B

C

250

250

250

1120

1065

1275

99.999

99.999

99.999

65

70

185

99.999

99.999

99.999

*Escherichia coli*

(ATCC 11229)

A

B

C

300

300

300

990

1215

1460

99.999

99.999

99.999

65

80

190

99.999

99.999

99.999

\* TBC = Total Bacterial Count, cfu/ml

† % Kill calculated based on initial

inoculum control count of 75-125

x 10<sup>6</sup> cfu/ml.

### Conclusion

Under the conditions of these investigations, Xtreme Detergent/Disinfectant demonstrated **sanitizing** activity against *Staphylococcus aureus* and *Escherichia coli* according to criteria established by the U. S. Environmental Protection Agency for registration and labeling of a disinfectant product as a sanitizer.