



**Maintenance Solutions**

## SUMMARY OF ANTIMICROBIAL ACTIVITY

### **MPC 5 FRESH BREEZE PF**

Non-Acid Disinfectant Restroom Cleaner

#### Description

**MPC 5 FRESH BREEZE PF** Disinfectant & Detergent is a broad spectrum, hard surface disinfectant. When used as directed, this product will deliver effective biocidal action against bacteria, fungi, and viruses. This formulation is a blend of a premium active ingredients and inerts: surfactants, chelates, and water. Biocidal performance is attained when this product is properly diluted at 2 oz. per gallon or 1:64. **MPC 5 FRESH BREEZE PF** can be used to disinfect a wide variety of hard surfaces such as floors, walls, toilets, sinks, and countertops in hospitals, households, and institutions.

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#### Regulatory Summary

#### Physical Properties

|                             |               |
|-----------------------------|---------------|
| <b>EPA Registration No.</b> | 10324-93-8325 |
| <b>USDA Authorization</b>   | None          |
| <b>California Status</b>    |               |
| <b>Canadian PCP#</b>        | None          |
| <b>Canadian Din #</b>       | None          |

|                                 |           |
|---------------------------------|-----------|
| <b>pH of Concentrate</b>        | 11.5 ±0.2 |
| <b>Specific Gravity @ 25°C</b>  | 1.043     |
| <b>Pounds per gallon @ 25°C</b> | 8.7       |

|                               |             |
|-------------------------------|-------------|
| <b>Flash Point (PMCC)</b>     | >200°F      |
| <b>% Quat (mol. wt.360.5)</b> | 4.275-4.725 |
| <b>% Volatile</b>             | 93.5-94.5   |

(7/2014)

### Summary of Antimicrobial Test Results

This product is a "One-Step" Hospital Disinfectant, Virucide, Fungicide, Mildewstat, and Cleaner. Listed below, and in the following pages, is a summary of the Antimicrobial Claims and a review of the Antimicrobial Test Results.

| <b>Claim:</b><br>Disinfectant                                              |                  | <b>Contact Time:</b><br>10 minutes                             |                             | <b>Organic Soil:</b><br>5% |                  | <b>Water Conditions:</b><br>400 ppm as CaCO <sub>3</sub> |  |
|----------------------------------------------------------------------------|------------------|----------------------------------------------------------------|-----------------------------|----------------------------|------------------|----------------------------------------------------------|--|
| <b>Test Method:</b>                                                        |                  | Official Method of the AOAC, 14 Edition<br>Use Dilution Method |                             |                            |                  |                                                          |  |
| <b>Organism</b>                                                            | <b>ATCC#</b>     | <b>Use-Dilution Concentration</b>                              | <b>Hard Water Condition</b> | <b>Contact Time</b>        | <b>Results</b>   |                                                          |  |
| Acinetobacter Baumannii                                                    | 19606            | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/60, 0/60, 0/60 |                                                          |  |
| Bordetella bronchiseptica                                                  |                  | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/60, 0/60, 0/60 |                                                          |  |
| Campylobacter jejuni                                                       |                  | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/60, 0/60, 0/60 |                                                          |  |
| Corynebacterium ammoniagenes                                               |                  | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/60, 0/60, 0/60 |                                                          |  |
| Enterobacter aerogenes                                                     | 13048            | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Enterococcus faecalis                                                      |                  | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Escherichia coli                                                           | 11229            | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Escherichia coli 0111:H8                                                   | BAA-184          | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Escherichia coli 0157:H7                                                   | 35150            | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Klebsiella pneumoniae                                                      | 13883            | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Listeria monocytogenes                                                     | 15313            | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Pseudomonas aeruginosa                                                     | Clinical Isolate | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Salmonella enterica                                                        |                  | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Salmonella Typhi                                                           | 6539             | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Salmonella schottmuelleri                                                  |                  | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Shigella dysenteriae                                                       |                  | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Staphylococcus aureus (MRSA)                                               | 33592            | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Community associated Methicillin resistant Staphylococcus aureus (CA MRSA) |                  | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Staphylococcus aureus                                                      | Clinical Isolate | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |
| Streptococcus salivarius                                                   |                  | 703 ppm (2.0 oz/gal)                                           | 400 ppm                     | 10 minutes                 | 0/10, 0/10       |                                                          |  |

**Conclusion:** All lots of this product effectively killed the above listed bacteria as specified in the test performance standards. This product meets EPA requirements for hard surface disinfectant claims in hospital and medical environments when diluted to 703 ppm active concentration in 400 ppm synthetic hard water, and in the presence of 5% organic soil.

**Summary of Antimicrobial Test Results - (Continued)**

|                                                                                                              |                                    |                            |                                                          |
|--------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------|----------------------------------------------------------|
| <b>Claim:</b><br>Mildewstat                                                                                  | <b>Contact Time:</b><br>10 minutes | <b>Organic Soil:</b><br>5% | <b>Water Conditions:</b><br>400 ppm as CaCO <sub>3</sub> |
| <b>Test Method:</b><br>Mildewstat (Mold and Mildew Control) - EPA - TSD<br>6-201 Mildewstat on Hard Surfaces |                                    |                            |                                                          |

| Organism          | ATCC# | Use-Dilution Concentration | Hard Water Condition | Replicates | Results    |
|-------------------|-------|----------------------------|----------------------|------------|------------|
| Aspergillus niger | 6275  | 703 ppm (2.0 oz/gal)       | 400 ppm              | 10, 10     | 0/10, 0/10 |

**Conclusion:** All lots of this product were effective against Aspergillus niger under the test conditions outlined in the EPA test performance standards described above. This product is an effective mildewstat for non-porous inanimate hard surfaces when diluted to 703 ppm active concentration in 400 ppm synthetic hard water and in the presence of 5% organic soil.

|                                                                                    |                                    |                            |                                                          |
|------------------------------------------------------------------------------------|------------------------------------|----------------------------|----------------------------------------------------------|
| <b>Claim:</b><br>Fungicide                                                         | <b>Contact Time:</b><br>10 minutes | <b>Organic Soil:</b><br>5% | <b>Water Conditions:</b><br>400 ppm as CaCO <sub>3</sub> |
| <b>Test Method:</b><br>Official Method of Analysis of the AOAC<br>Fungicidal Test. |                                    |                            |                                                          |

| Organism                    | ATCC# | Dilution             | Replicates | Results |        |        |
|-----------------------------|-------|----------------------|------------|---------|--------|--------|
|                             |       |                      |            | 5 Min   | 10 Min | 15 Min |
| Trichophyton mentagrophytes | 9533  | 703 ppm (2.0 oz/gal) | 4          | 0/4 +   | 0      | 0      |

**Conclusion:** All lots of this product effectively killed Trichophyton mentagrophytes as specified in the test performance standards. This product is an effective fungicide for non-porous inanimate hard surfaces when diluted to 703 ppm active concentration in 400 ppm synthetic hard water and in the presence of 5% organic soil.

**Summary of Antimicrobial Test Results - (Continued)**

| <b>Claim:</b><br>Virucide                                    |                                   | <b>Contact Time:</b><br>Varies                |                                   | <b>Organic Soil:</b><br>5% |  | <b>Water Conditions:</b><br>400 ppm as CaCO <sub>3</sub> |  |
|--------------------------------------------------------------|-----------------------------------|-----------------------------------------------|-----------------------------------|----------------------------|--|----------------------------------------------------------|--|
| <b>Test Method:</b>                                          |                                   | EPA Guidelines                                |                                   |                            |  |                                                          |  |
| <b>Organism</b>                                              | <b>Source of Virus or ATCC#</b>   | <b>Host System; Cytopathic Effect</b>         | <b>Use-Dilution Concentration</b> | <b>Contact Time</b>        |  |                                                          |  |
| Herpes Simplex Type 1                                        | HSV-1; ATCC VR-733                | VERO cells; lytic cytopathic effect           | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Herpes Simplex Type 2                                        | HSV-2; MS Strain                  | VERO cells; lytic cytopathic effect           | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| HIV-1 (AIDS Virus)                                           | HTLV-III <sub>RF</sub> ; NCI      | MT2 cells; lytic cytopathic effect            | 703 ppm (2.0 oz./gal)             | 4 Min.                     |  |                                                          |  |
| Influenza A/ Hong Kong                                       | ATCC 68-H3N2                      | MDCK cells; lytic cytopathic effect           | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| <b>Hepatitis B</b>                                           | Hepadnavirus Testing, Inc. (DHBV) | Primary Duck Hepaocytes No Cytopathic Effects | 703 ppm (2.0 oz./gal)             | 10 min.                    |  |                                                          |  |
| Hepatitis C (HCV)                                            | Bovine Viral Diarrhea Virus       | MDBK Cells                                    | 703 ppm (2.0 oz./gal)             | 10 min.                    |  |                                                          |  |
| Human Corona Virus                                           | VR-740 Strain 229E                | MRC-5 Host                                    | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Norovirus (Norwalk-like virus) (Feline Calicivirus)          | ATCC VR-782                       |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Influenza A (H1N1) virus                                     | ATCC VR-1469                      |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Influenza A2/Japan                                           |                                   |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Rubella virus                                                | Strain M-33                       | RK13 cells; cytopathic effect                 | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Rabies virus                                                 | ATCC VR-138                       |                                               | 1055 ppm (2.5 oz./gal)            | 10 Min.                    |  |                                                          |  |
| Respiratory Syncytial virus                                  | ATCC VR-26                        |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Vaccinia                                                     | Strain IHD                        | VERO Cells; lytic cytopathic effect           | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Vancomycin Resistant Enterococcus Faecalis VRE               | ATCC 51575                        |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Vancomycin Intermediate resistant Staphylococcus aureus VISA | HIP 5836                          |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Avian Influenza A                                            | H5N1                              |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Avian Influenza A                                            | H9N2 Turkey/Wisconsin Virus       |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Avian Reovirus                                               |                                   |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Avian Infectious Bronchitis virus                            | ATCC VR-22                        |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Bovine Viral Diarrhea virus                                  |                                   |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |
| Canine Adenovirus                                            |                                   |                                               | 1055 ppm (2.5 oz./gal)            | 10 Min.                    |  |                                                          |  |
| Canine Coronavirus                                           |                                   |                                               | 703 ppm (2.0 oz./gal)             | 10 Min.                    |  |                                                          |  |

| Organism                                         | Source of Virus or ATCC#     | Host System; Cytopathic Effect | Use-Dilution Concentration | Contact Time |
|--------------------------------------------------|------------------------------|--------------------------------|----------------------------|--------------|
| Canine Distemper virus                           | ATCC-VR-256                  |                                | 703 ppm<br>(2.0 oz./gal)   | 10 Min.      |
| Canine Parainfluenza virus                       |                              |                                | 1055 ppm<br>(2.5 oz./gal)  | 10 Min.      |
| Canine Parvovirus (CPV)                          |                              |                                | 2812 ppm<br>(8.0 oz./gal)  | 10 Min.      |
| Equine Arteritis virus                           |                              |                                | 703 ppm<br>(2.0 oz./gal)   | 10 Min.      |
| Feline Calicivirus                               |                              |                                | 1055 ppm<br>(2.5 oz./gal)  | 10 Min.      |
| Feline Infectious Peritonitis                    |                              |                                | 1055 ppm<br>(2.5 oz./gal)  | 10 Min.      |
| Feline Leukemia Virus                            | ATCC VR-717<br>Strain FL-237 |                                | 1055 ppm<br>(2.5 oz./gal)  | 10 Min.      |
| Feline Panleukopenia                             |                              |                                | 1055 ppm<br>(2.5 oz./gal)  | 10 Min.      |
| Feline Picornavirus                              | ATCC VR-649                  |                                | 1055 ppm<br>(2.5 oz./gal)  | 10 Min.      |
| Feline Rhinotrachetis                            |                              |                                | 1055 ppm<br>(2.5 oz./gal)  | 10 Min.      |
| Infectious Bovine Rhinotracheitis                | ATCC VR-793                  |                                | 703 ppm<br>(2.0 oz./gal)   | 10 Min.      |
| Infectious Avian Laryotracheitis virus (IBR)     |                              |                                | 703 ppm<br>(2.0 oz./gal)   | 10 Min.      |
| Infectious Bronchitis virus                      |                              |                                | 703 ppm<br>(2.0 oz./gal)   | 10 Min.      |
| Infectious Canine Hepatitis virus                |                              |                                | 1055 ppm<br>(2.5 oz./gal)  | 10 Min.      |
| Minute virus of Mice (Parvovirus)                |                              |                                | 2812 ppm<br>(8.0 oz./gal)  | 10 Min.      |
| Murine Parainfluenza virus type 1                |                              |                                | 1055 ppm<br>(2.5 oz./gal)  | 10 Min.      |
| Newcastle disease virus                          |                              |                                | 703 ppm<br>(2.0 oz./gal)   | 10 Min.      |
| Porcine Parvovirus                               |                              |                                | 2812 ppm<br>(8.0 oz./gal)  | 10 Min.      |
| Porcine Respiratory & Reporductive Virus (PRRSV) |                              |                                | 703 ppm<br>(2.0 oz./gal)   | 10 Min.      |
| Porcine Rotavirus                                |                              |                                | 703 ppm<br>(2.0 oz./gal)   | 10 Min.      |
| Pseudorabies Virus                               | ATCC VR-135                  |                                | 703 ppm<br>(2.0 oz./gal)   | 10 Min.      |
| Transmissible Gastroenteritis                    | ATCC VR-763                  |                                | 703 ppm<br>(2.0 oz./gal)   | 10 Min.      |
|                                                  |                              |                                |                            |              |

**Conclusion:** All lots of this product effectively inactivated the above listed viruses as specified in the test performance standards. This product meets EPA requirements for hard surface virucidal claims in hospital and medical environments when diluted to 703 ppm in 400 ppm A.O.A.C. synthetic hard water and in the presence of 5% organic soil.