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Quaternary Compatibility Demonstration SOP for Single-Use Microfiber Mops and/or Laundered Mops

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BACKGROUND:

Single-use microfiber mop technology for the healthcare industry continues to develop as healthcare recognizes the need of single-use microfiber because of laundered microfiber mop shortcomings. Single-use mops will evolve and improve through operational feedback since this market segment is still in its infancy.

Single-use microfiber mops were developed based on customer and industry feedback for improved solution capacity addressing the sanitizer and/or disinfectant compatible substrates concerns raised by the major disinfectant manufacturers to the healthcare industry. As a result, manufacturers continue to improve upon original design for disinfectant compatibility and absorptivity.

Integrating cleaning and sanitation tools that will not inactivate chemical chemistry or tool performance required developmental complexity that was not available until recently. This is especially true for disinfectants, each of which, require different substrates to assure they are efficacious to perform the job as intended.

This laboratory addresses the performance properties of the multiple manufacturers of single-use microfiber mops, in addition to industrial laundered microfiber mop.

SCOPE:

Provide a simplified SOP as an effective training tool that is easily demonstrated for educational purposes.

This test provides:

1) Soak Method - soaking procedures for soaking solutions ppm and/or
2) Dip & Spread Method - evaluate the dip and spread method to demonstrate immediate quaternary neutralization.

CONCLUSION:

Single-use microfiber mops vary in their disinfectant compatibility especially for quaternary disinfectants when considering other current single-use microfiber mops or against laundered mops. This testing provides an easy demonstration on the effect of new microfiber mops versus laundered microfiber mops and other single-use mop brands.

This test allows you to compare the dip and spread mop method along with the soaking mop method at the same time. Please contact Geerpres with additional questions or results that you might encounter while running this test.

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TEST METHODS

QUATERNARY LABORATORY ANALYSIS:

1) Equipment
   a) Micro Essential Laboratories, pHydrion quat check 1000, (0-1000 ppm)
      i) www.microessentiallab.com Hydrion 0-1000 Cat# QC-1001
   b) Micro Essential Laboratories, pHydrion QT-10 (0-400 ppm)
      i) www.microessentiallab.com Hydrion QT 10 Cat# QT-10
   c) Containers for mixing quaternary solution – 1 or 1 ½ gallon plastic container
   d) Containers for testing mops- Rubbermaid 9.6 cup 6”W x 10”L x 3”H clear plastic latchable container
   e) Quaternary Testing Solutions for testing
      i) Hospital’s Quaternary Solution- from healthcare facility
      ii) Simple Solutions- Pretreated Water Activated Sanitizing Wiper by ITW Pro Brands - Item # 9503 – Phone # 800-242-7374
         (1) http://itwprofessionalbrands.com/1311/atlanticmills/value-added-food-service/simple-solutions 2 towel in ½ gallon water should provide 400 ppm and 4 towels in ½ gallon will be about 800 ppm quaternary solution.

2) Materials
   a) Controls - 400 ppm and/or 1000 ppm quaternary depending on quaternary source for testing
   b) Advantex Single-Use Microfiber Mop
   c) Re-laundered microfiber mops for comparison

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TEST PROCEDURE:

Make sure that you have test strips for testing 1000 ppm and 400 ppm quaternary test strengths depending on the test site and if you are providing the quaternary for testing.

- It is important that you run the test several times prior to presenting it due to nuances with the testing.
- All microfiber mops will react with quats.
    - Brand new ones react much less than when they are laundered.
    - New mops are still coated with finishing oils that slows down its reaction with quats. There is some immediate reaction, but complete reaction is usually within 5 minutes.
- Previously laundered mops will react immediately because the finishing oils are removed in the laundry process and the laundered mop contains residual detergents that permanently neutralize/inactivate the quaternary disinfectant.

Establish where you will be testing and what products you will be testing and have all of your tools and supplies properly ready for the demonstration. It is best to have your quaternary solution properly prepared before you start to minimize the additional time that is required to get to the proper strength for you test.

The 400-ppm concentration is an effective demonstration for titrations quaternary utilizing the pHydrion QT-10 test papers due to its easy to read color charts. Also, it is not necessary to use gloves doing this test since the 400 ppm is typical for sanitation no-rinse applications.

TEST SOLUTION-
Bulk Quaternary Solution Feedstock for Test

a) Use Bulk Quaternary solution direct from the chemical supplier's dispenser.
    i) *Make sure that the solution to 600-800 ppm and at room temperature.*
    (1) *You must adjust the solution to 600-800, preferably 800 for the test.*
    ii) The reason is that suppliers will make the solution much greater than 1000 ppm to compensate for the quat binding test. This can result in two things:
        (1) Quaternary concentration greater than 800 ppm or different than specific by the label is illegal and it's costing the hospital a significant increase in spending. The supplier should be notified if the concentration is significantly higher since their disinfectant is being illegally dispensed.
        (2) Testing solutions that are greater than 800 ppm will not demonstrate the true effect of quat binding since the test strips cannot see the difference over 1000 ppm especially if the solution is at 3000 ppm which is harmful.

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TEST PROCEDURES –

Dip and Mop procedure

This test method demonstrates the immediate impact of quat binding.

1. Pour equal amounts of 1) 400 ppm or 2) 600-800 ppm test solution into your testing containers
    a. 400 ml or 1 ½ cups of solution.
    b. Test both solutions – *they must be at room temperature and for 10 seconds*
    c. Place the Advantex mop into the solution to totally wet it out
        i. Immediately remove it and squeeze it and then squeeze out a portion onto a hard surface.
        ii. Place the mop back into the solution.
        iii. Test the solution on the hard surface and move the test strip back and forth since you have limited solution and surface area on a hard surface.
    d. Repeat this test with the laundered mop and/or other brand of microfiber mops.
        i. Make sure that the laundered mops are completely saturated
        ii. Immediately squeeze out the solution and then squeeze out a portion onto a hard surface.
        iii. Place the mop back into the solution and then test the solution with your test strips on the hard surface while moving the strip back and forth in the solution.

Soaking Mop Procedure

This test method demonstrates the impact on quat binding on the solution and mop in that they can be different and it is the concentration coming from the mop to the floor that is critical.

1. Allow the Advantex mop and the laundered mop to remain in their respective solutions while swishing them in the solutions periodically.
    a. Test the solutions at 5 minutes and 10 minutes
    b. Also repeat squeezing out some of the solution from the mops at 5 minutes and 10 minutes.