



Micrillon® is a polymer additive chemistry in master batch form that delivers chlorine atoms to the surface. Micrillon is charged and recharged with chlorine atoms provided by an EPA-registered chlorine active sanitizer or disinfectant including household bleach laundry products.* The primary objective and benefit of the chlorine atoms delivered to the surface by Micrillon, as determined by the EPA, is its efficacy in eliminating bacteria, viruses, and fungi including antibiotic-resistant

microbes such as *C auris*, MRSA, VRE, CRE, and *Clostridioides difficile* (spores). While most MRSA infections occur among patients in healthcare settings, it is becoming more common among all professional sports (NFL, MLB, etc.) school athletes, daycare facilities and health clubs.

What sets Micrillon apart from competitive products? Micrillon is the only charge/rechargeable polymer additive that is incorporated at the “pellet (raw material melt) stage.” Micrillon, the most cost effective compared to competitive technologies, is permanent, durable, non-leeching, environmentally sound, with unlimited potential and applications. However, what truly differentiates Micrillon from competitive technologies is that it is *rechargeable*.

High performance products incorporating Micrillon are covered by multiple international patents. The Micrillon chemistry infused in plastic products, added at the raw material stage, binds chlorine molecules to the surface. Independent, 3rd party lab testing has demonstrated that Micrillon fibers when charged with *chlorine atoms* were effective against 99.999% of MRSA in less than 2 minutes and 99.999% Trichophyton *mentagrophytes* (athletes' foot) in 5 minutes or less.

Microbial Testing <u>Micrillon fiber</u>				
Time Kill Evaluation of Antimicrobial <u>Modified</u> AATCC 100 Method				
Organism	<i>Exposure Time</i>			
	2 minutes	5 minutes	10 minutes	ATS Lab Project
Staph. aureus	>99.99%	>99.999%	>99.999%	Project # A07337
MRSA	>99.999%	>99.999%	>99.999%	Project # A07373
Salmonella enterica	99.2%	>99.999%	>99.9999%	Project # A07529
Listeria monocytogenes	96.6%	98.9%	99.9%	Project # A07529
Escherichia coli	84.3%	99.5%	>99.9999%	Project # A07529
Trichopyton mentagrophytes	96.5%	>99.999%	>99.999%	Project # A07474
H1N1 (Swine Flu Virus)	NA	≥99.9994%	≥99.9992%	Project # A08009
Bacterial Spores	<i>Exposure Time</i>			
	30 minutes	1 Hour	3 Hours	ATS Lab Project
Clostridium difficile	>99.9%	>99.9%	>99.9%	Project # A07374

Micrillon® - Description:

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Micrillon is the most versatile and effective chemistry available at the most competitive price. The results below are for an injection molded product, UMF's patented CPULL, developed for hospital privacy curtains. Micrillon also inhibits the formation of biofilm.

Results of the Study

Testing with *S. aureus* (continued)

Test Microorganism	Contact Time	Carrier Type	Replicate	CFU/Carrier	Average CFU/Carrier	Percent Reduction Compared to Control at 24 Hours	Log ₁₀ Reduction Compared to Control at 24 Hours
<i>S. aureus</i> 6538	24 Hours	Microchem Control	1	6.80E+05	7.70E+05	N/A	
			2	8.60E+05			
		Sample #1 CP-20	1	<1.00E+01	<1.00E+01	>99.9987%	>4.89
			2	<1.00E+01			
		Sample #2 CP-40	1	<1.00E+01	<1.00E+01	>99.9987%	>4.89
			2	<1.00E+01			

The limit of detection for this assay was 10 colony forming units and is reported as <1.00E+01 CFU/Carrier in the table above and as zero in the graph below. The limits of detection calculated for each replicate were used to perform the calculations outlined in the table.

Results of the Study

Testing with *K. pneumoniae* (continued)

Test Microorganism	Contact Time	Carrier Type	Replicate	CFU/Carrier	Average CFU/Carrier	Percent Reduction Compared to Control at 24 Hours	Log ₁₀ Reduction Compared to Control at 24 Hours
<i>K. pneumoniae</i> 4352	24 Hours	Microchem Control	1	7.10E+07	5.85E+07	N/A	
			2	4.60E+07			
		Sample #1 CP-20	1	6.60E+02	3.85E+02	99.9993%	5.18
			2	1.10E+02			
		Sample #2 CP-40	1	6.70E+02	<3.40+02	>99.9994%	>5.24
			2	<1.00E+01			

The limit of detection for this assay was 10 colony forming units and is reported as <1.00E+01 CFU/Carrier in the table above and as zero in the graph below. The limits of detection calculated for each replicate were used to perform the calculations outlined in the table.

* When laundering with an EPA-registered bleach product following the manufacturers instruction or immersed in an EPA disinfectant such as Klorese for 20 mins.

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