



Third party Laboratory Validation: ASTM E1153 method | Study ID# NG1539 (MicroChem)

Results of the Study - *S. aureus* ATCC 6538



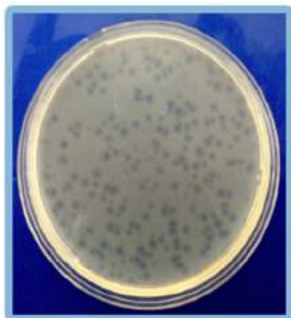
Test Microorganism	Carrier Distance	Contact Time	Replicate	CFU/Carrier	Average CFU/Carrier	Percent Reduction Compared to Control at Time Zero	Log ₁₀ Reduction Compared to Control at Time Zero
<i>S. aureus</i> ATCC 6538	N/A	Time Zero	1	1.24E+07	1.16E+07	N/A	
			2	1.18E+07			
			3	1.06E+07			
	4 inches ± 2 inches	10 seconds	1	6.00E+01	9.40E+02	99.99%	4.09
			2	1.82E+03			
			3	6.00E+01			
		30 seconds	1	1.00E+02	<6.00E+01	>99.9995%	>5.29
			2	2.00E+01			
			3	<1.00E+01			
		2 minutes	1	4.90E+02	<2.50E+01	>99.9988%	>4.67
			2	<1.00E+01			
			3	<1.00E+01			

Results of the Study – *E. coli* ATCC 17755



Test Microorganism	Carrier Distance	Contact Time	Replicate	CFU/Carrier	Average CFU/Carrier	Percent Reduction Compared to Control at Time Zero	Log ₁₀ Reduction Compared to Control at Time Zero
<i>E. coli</i> ATCC 17755	N/A	Time Zero	1	1.13E+07	8.17E+06	N/A	
			2	5.30E+06			
			3	7.90E+06			
	4 inches ± 2 inches	10 seconds	1	1.60E+03	1.66E+03	99.98%	3.69
			2	1.71E+03			
			3	4.90E+02			
		30 seconds	1	5.70E+04	2.86E+04	99.65%	2.46
			2	1.00E+02			
			3	1.00E+01			
		2 minutes	1	<1.00E+01	<8.50E+01	>99.99896%	>4.98
			2	1.60E+02			
			3	6.00E+01			

Results of the Study – MS2 Bacteriophage ATCC 15597-B1



Test Microorganism	Carrier Distance	Contact Time	Replicate	PFU/Carrier	Average PFU/Carrier	Percent Reduction Compared to Control at Time Zero	Log ₁₀ Reduction Compared to Control at Time Zero
MS2 Bacteriophage ATCC 15597-B1	N/A	Time Zero	1	8.40E+05	8.07E+05	N/A	
			2	6.20E+05			
			3	9.60E+05			
	4 inches ± 2 inches	10 seconds	1	3.11E+03	1.36E+04	98.32%	1.77
			2	2.40E+04			
			3	2.12E+03			
		30 seconds	1	5.00E+01	3.50E+01	99.996%	4.36
			2	2.00E+01			
			3	4.00E+01			
		2 minutes	1	<1.00E+01	<1.00E+01	>99.9988%	>4.91
			2	<1.00E+01			
			3	<1.00E+01			