

# Array™ Foaming Hand Sanitizer

## Time Kill Assay Results

This study demonstrates that Array Foaming Hand Sanitizer is an effective Topical Antimicrobial effective against both Gram-Positive and Gram-negative bacterial pathogens. Data listed below is from an Exposure time of 15 Seconds:

Organism	Test Population Control (CFU/ml) Number of Survivors (CFU/ml)		% Reduction	Log Reduction
<i>Acinetobacter baumannii</i> ATCC 19606	3.5 x 10 <sup>6</sup>	<4	>99.999	>5.84 Log <sub>10</sub>
<i>Campylobacter jejuni</i> ATCC 29428	1.02 X 10 <sup>7</sup>	<1 X 10 <sup>2</sup>	>99.999	>5.00 Log <sub>10</sub>
<i>Candida albicans</i> ATCC 10231	1.60 X 10 <sup>5</sup>	6.0 X 10 <sup>3</sup>	96.3	1.42 Log <sub>10</sub>
<i>Clostridium difficile</i> ATCC 9689	3.40 X 10 <sup>6</sup>	<2	>99.9999	>6.20 Log <sub>10</sub>
<i>Enterococcus faecalis</i> Vancomycin Resistant (VRE) ATCC 51575	1.12 X 10 <sup>6</sup>	3.2 X 10 <sup>1</sup>	99.99	4.54 Log <sub>10</sub>
<i>Escherichia coli</i> ATCC 11229	3.80 X 10 <sup>6</sup>	4	99.999	6.00 Log <sub>10</sub>
<i>Escherichia coli</i> O157:H7 ATCC 35150	1.26 X 10 <sup>6</sup>	<2	>99.999	>5.80 Log <sub>10</sub>
<i>Klebsiella pneumoniae</i> ATCC 4352	1.10 X 10 <sup>6</sup>	2	99.999	5.70 Log <sub>10</sub>
<i>Klebsiella pneumoniae</i> NDM -1 positive CDC 1000527 ("New Delhi" superstrain)	7.4 x 10 <sup>5</sup>	<5	>99.9999	>5.2 Log <sub>10</sub>
<i>Listeria monocytogenes</i> ATCC 19117	4.7 X 10 <sup>6</sup>	1.9 X 10 <sup>3</sup>	99.9	3.39 Log <sub>10</sub>
<i>Pseudomonas aeruginosa</i> ATCC 15442	3.5 X 10 <sup>6</sup>	<2	99.9999	>6.20 Log <sub>10</sub>
<i>Salmonella choleraesuis</i> serotype enteritidis ATCC 4931	6.8 X 10 <sup>5</sup>	2	>99.999	5.50 Log <sub>10</sub>
<i>Salmonella choleraesuis</i> serotype paratyphi ATCC 8759	5.6 X 10 <sup>5</sup>	<2	>99.999	>5.50 Log <sub>10</sub>
<i>Salmonella choleraesuis</i> serotype pullorum ATCC 19945	8.9 X 10 <sup>5</sup>	<2	>99.999	>5.70 Log <sub>10</sub>
<i>Salmonella choleraesuis</i> serotype typhimurium ATCC 23564	7.7 X 10 <sup>5</sup>	6	>99.999	>5.10 Log <sub>10</sub>
<i>Salmonella typhi</i> ATCC 6539	1.27 X 10 <sup>6</sup>	2	99.999	5.80 Log <sub>10</sub>
<i>Shigella dysenteriae</i> ATCC 13313	1.3 X 10 <sup>6</sup>	<2	>99.999	>5.80 Log <sub>10</sub>
<i>Shigella flexneri</i> ATCC 12022	1.39 X 10 <sup>6</sup>	2.8 X 10 <sup>1</sup>	99.99	4.69 Log <sub>10</sub>
<i>Shigella sonnei</i> ATCC 25931	2.43 X 10 <sup>7</sup>	2.0 X 10 <sup>1</sup>	99.9999	6.09 Log <sub>10</sub>
<i>Staphylococcus aureus</i> ATCC 6538	6.7 X 10 <sup>6</sup>	<2	>99.9999	>6.53 Log <sub>10</sub>
<i>Staphylococcus aureus</i> Methicillin Resistant (MRSA) ATCC 33592	1.23 X 10 <sup>7</sup>	3.8 X 10 <sup>3</sup>	>99.9	3.51 Log <sub>10</sub>
<i>Staphylococcus aureus</i> Community Associated Methicillin Resistant (MRSA) NARSA NRS 123, Genotype USA400	1.18 X 10 <sup>6</sup>	5.8 X 10 <sup>2</sup>	>99.9	>3.30 Log <sub>10</sub>
<i>Staphylococcus epidermidis</i> ATCC 12228	7.2 X 10 <sup>5</sup>	<2	99.999	5.56 Log <sub>10</sub>
<i>Streptococcus pneumonia</i> ATCC 6305	6.4 X 10 <sup>5</sup>	<2	>99.999	>5.51 Log <sub>10</sub>
<i>Streptococcus pyogenes</i> ATCC 19615	1.77 X 10 <sup>6</sup>	<2	>99.999	>5.90 Log <sub>10</sub>
<i>Vibrio cholera</i> ATCC 11623	4.7 X 10 <sup>5</sup>	<2	>99.999	>5.40 Log <sub>10</sub>
<i>Xanthomonas axonopodis</i> (Citrus Canker) ATCC 49118	1.28 X 10 <sup>6</sup>	3.6 X 10 <sup>1</sup>	>99.99	4.55 Log <sub>10</sub>
<i>Yersinia enterocolitica</i> ATCC 23715	2.23 X 10 <sup>6</sup>	3.8 X 10 <sup>1</sup>	99.99	4.77 Log <sub>10</sub>

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