



MICROARMOR SKIN SANITIZER

DESCRIPTION

Plant derived hand and skin sanitizer foam and wipes that kills up to 99.9999% of germs. Along with frequent hand washing helps protect against and reduce bacteria, viruses and fungi that cause disease.

FEATURES

- Non-alcohol formula will not dry skin and remove natural oils.
- Unique formulation that is both Antibacterial and Antimicrobial.
- Improves skin condition with repeated use.
- Unlike alcohol based products, MicroArmor remains effective for 2-4 hours.
- Effective against MRSA and VRE and other germs that alcohol based products are not.
- Unlike alcohol based products is non-flammable and safe for kids.
- More effective and lower in cost than competitive products.
- Various sizes available in foaming, wipes and sprays.

Many popular hand sanitizers and antimicrobial products use ethyl alcohol, harsh foaming agents, synthetic gels and preservatives. These ingredients are harmful to children and not easily broken down in the environment, harming wildlife and damaging the ecosystem.

All ingredients used in MicroArmor Skin Sanitizer are natural and plant derived - from soy, palm, coconut and corn. MicroArmor Skin Sanitizers have a biorenewable index of 75 as it contains materials of vegetable origin that can be replenished in the environment in a relatively short period of time. Plant oils and oleochemicals derived from them represent such alternative sources, which can deliver a substantial part of what is needed to replace petroleum based raw materials. Plant derived raw materials, such as those used in the making of MicroArmor Skin Sanitizer are directly renewable by the photosynthetic reduction of carbon dioxide from the atmosphere.

Efficacy Testing

MicroArmor's Hand Sanitizing formula is very efficient at reducing bacteria on the skin, effective against a broad range of pathogenic bacteria in as little as 15 seconds as the Chlorine Equivalency and Time Kill Data below illustrate. MicroArmor is very effective at reducing bacteria on the skin, yet very gentle on the skin and eyes.

Time Kill Study

This study is designed to examine the rate of kill of a test substance after inoculation with a test organism. Results are expressed in percent reduction and log reduction of the test organism. Exposure time 15 Seconds

Organism	Test Population Control (CFU/ml)	Number of Survivors (CFU/ml)	% Reduction	Log Reduction
<i>Campylobacter jejuni</i> ATCC 29428	1.02 X 10 ⁷	<1 X 10 ²	>99.999	>5.00 Log10
<i>Candida albicans</i> ATCC 10231	1.60 X 10 ⁵	6.0 X 10 ³	96.3	1.42 Log10
<i>Clostridium difficile</i> ATCC 9689	3.40 X 10 ⁶	<2	>99.9999	>6.20 Log10
<i>Enterococcus faecalis</i> Vancomycin Resistant (VRE) ATCC 51575	1.12 X 10 ⁶	3.2 X 10 ¹	99.99	4.54 Log10
<i>Escherichia coli</i> ATCC 11229	3.80 X 10 ⁶	4	99.999	6.00 Log10
<i>Escherichia coli</i> O157:H7 ATCC 35150	1.26 X 10 ⁶	<2	>99.999	>5.80 Log10
<i>Klebsiella pneumoniae</i> ATCC 4352	1.10 X 10 ⁶	2	99.999	5.70 Log10
<i>Listeria monocytogenes</i> ATCC 19117	4.7 X 10 ⁶	1.9 X 10 ³	99.9	3.39 Log10
<i>Pseudomonas aeruginosa</i> ATCC 15442	3.5 X 10 ⁶	<2	99.9999	>6.20 Log10
<i>Salmonella choleraesuis</i> serotype enteritidis ATCC 4931	6.8 X 10 ⁵	2	>99.999	5.50 Log10
<i>Salmonella choleraesuis</i> serotype paratyphi ATCC 8759	5.6 X 10 ⁵	<2	>99.999	>5.50 Log10
<i>Salmonella choleraesuis</i> serotype pullorum ATCC 19945	8.9 X 10 ⁵	<2	>99.999	>5.70 Log10
<i>Salmonella choleraesuis</i> serotype typhimurium ATCC 23564	7.7 X 10 ⁵	6	>99.999	>5.10 Log10

Organism	Test Population Control (CFU/ml)	Number of Survivors (CFU/ml)	% Reduction	Log Reduction
<i>Salmonella typhi</i> ATCC 6539	1.27 X 10 ⁶	2	99.999	5.80 Log10
<i>Shigella dysenteriae</i> ATCC 13313	1.3 X 10 ⁶	<2	>99.999	>5.80 Log10
<i>Shigella flexneri</i> ATCC 12022	1.39 X 10 ⁶	2.8 X 10 ¹	99.99	4.69 Log10
<i>Shigella sonnei</i> ATCC 25931	2.43 X 10 ⁷	2.0 X 10 ¹	99.9999	6.09 Log10
<i>Staphylococcus aureus</i> ATCC 6538	6.7 X 10 ⁶	<2	>99.9999	>6.53 Log10
<i>Staphylococcus aureus</i> Methicillin Resistant (MRSA) ATCC 33592	1.23 X 10 ⁷	3.8 X 10 ³	>99.9	3.51 Log10
<i>Staphylococcus epidermidis</i> ATCC 12228	7.2 X 10 ⁵	<2	99.999	5.56 Log10
<i>Streptococcus pneumonia</i> ATCC 6305	6.4 X 10 ⁵	<2	>99.999	>5.51 Log10
<i>Streptococcus pyogenes</i> ATCC 19615	1.77 X 10 ⁶	<2	>99.999	>5.90 Log10
<i>Vibrio cholera</i> ATCC 11623	4.7 X 10 ⁵	<2	>99.999	>5.40 Log10
<i>Xanthomonas axonopodis</i> (Citrus Canker) ATCC 49118	1.28 X 10 ⁶	3.6 X 10 ¹	>99.99	4.55 Log10
<i>Yersinia enterocolitica</i> ATCC 23715	2.23 X 10 ⁶	3.8 X 10 ¹	99.99	4.77 Log10

Efficacy Result

MicroArmor Hand Sanitizer demonstrated an available chlorine equivalent to greater than the 200 ppm NaOCl standard control when tested against *Staphylococcus aureus* and *Salmonella typhi*.

Testing Protocols

Chlorine Equivalency Test - *Official Methods of Analysis of the AOAC, Sixteenth Edition, 1995. Chapter 6 –Disinfectants, 955.16 Chlorine (Available) in Disinfectants, Germicidal Equivalent Concentration.*

The object of this test is to determine the available chlorine germicidal equivalent concentration of the product as compared to 200, 100 and 50 ppm available chlorine in the NaOCl standard controls.

Application of the HPLC method for benzalkonium chloride determination in aerosol preparations, J. Dudkiewicz-Wilczynska, J. Tautt, I. Roman, J. Pharm. Biomed. Anal. 34 (2004) 909-920.

[Available online at www.sciencedirect.com]

** Independent third party testing was performed by ATS Labs, Eagan, MN **