



## Whisper 7054 Foam Hand Sanitiser

Whisper 7054 Foam Hand Sanitiser is a fast drying, non-sticky foam containing unique conditioning and moisturising ingredients that leave the skin soft and refreshed with a silky after-feel. This product does not contain polymer thickeners or silicones that can cause skin damage.

Whisper 7054 Foam Hand Sanitiser is based on the active ingredient Benzalkonium Chloride and can kill 99.99% of most common germs in just 15 seconds.

### Typical Properties

Physical form .....	Amber liquid Light amber liquid no fragrance
Benzalkonium chloride, active % .....	0.13
Assay (Epton), meq/kg .....	28.0-31.0
pH .....	5.0 – 7.0
Specific Gravity @25°C .....	1.00±0.02
Flash point (Seta) .....	>93°C
Bio-renewable Carbon, % .....	75 (Coconut Oil, Soybean Oil, Palm Kernel Oil)

### Why use Whisper 7054 Foam Hand Sanitiser?

**History-** Benzalkonium chloride is an alcohol-free antimicrobial compound that has been widely used in the health care industry for more than 60 years in formulas for preservatives, surface cleaners, sterilizing agents, and leave-on, anti-bacterial skin treatment products.

**Effectiveness-** Benzalkonium chloride based leave on hand sanitisers have demonstrated efficacy in real-world environments. When evaluated in Elementary School environments where the importance of proper hygiene practices including hand washing is taught and emphasized, the use of benzalkonium chloride-based leave-on instant hand sanitisers reduced illness absenteeism 30-40% in double-blind, placebo-controlled studies versus hand washing alone.



## Advantages of Whisper 7054 Foam Hand Sanitiser over Alcohol-based Hand Sanitisers

Benzalkonium chloride based hand sanitisers have several distinct advantages over alcohol-based hand sanitisers. While both product forms are fast acting and allow for use without water or towels, benzalkonium chloride based products are non-flammable, non-damaging to skin, have a residual effect and will not stain clothing or flooring.

**Safety-** Whisper 7054 Foam Hand Sanitiser is non-flammable. An internet search for alcohol-based hand sanitisers and fire will produce multiple hits.

Flash fires associated with use of alcohol based hand hygiene products can have potentially severe consequences for health care workers and their patients. A published example reported an incidence of flash fire associated with the use of an alcohol based hand antiseptic agent. The fire occurred when a spark of static electricity ignited the alcohol based hand gel on the hand of a health care worker.

The health care worker put the pre-measured amount of alcohol based hand gel in the palm of her hand from a wall-mounted dispenser. She then removed the 100% polyester gown, placed it on a metal surface, and began rubbing the gel onto both hands. While her hands were damp, she pulled open a metal sliding door, heard an audible static spark, saw a flash of light, and experienced spontaneous flames on the palm of one hand. After the incident, the palm showed redness but no blisters. Flames singed the hair on her arm.

**Skin Irritation-** Alcohol based hand sanitisers are effective for occasional use, but long-term, frequent use of the alcohol products can cause skin irritation.

Alcohol solubilises and strips away sebum and lipids that guard against bacterial infections of the skin. Extensive use of alcohol-based hand sanitisers actually increases the skin's susceptibility to infection by transient disease-causing bacteria. This situation can increase the chances of spreading disease-causing microorganisms among patients.

**Effectiveness and residual activity-** Alcohol based hand sanitisers stop working the instant they dry. Manufacturers of alcohol-based hand sanitisers claim that their product kills 99.99% of most common germs that may cause disease in as little as 15 seconds. Alcohol-based hand sanitizers dry in 8-10 seconds, and fall below the efficacious concentration of alcohol in seconds.

Whisper 7054 Foam Hand Sanitiser dries quickly, but 10-15 seconds slower than alcohol based hand sanitisers allowing more than the minimum contact time for complete efficacious coverage, including under fingernails. Additionally Whisper 7054 Foam Hand Sanitiser deliver 2 to 4 hours of residual protection.



In the referenced study to simulate repeated usage, alcohol based and alcohol free benzalkonium chloride based hand sanitisers were compared. In the study, subject's hands were repeatedly inoculated with bacteria followed by application of hand sanitiser, then evaluated for antimicrobial effectiveness.

The antimicrobial efficacy of the alcohol based hand sanitiser markedly decreased with subsequent contamination and decontamination cycles, whereas the alcohol-free benzalkonium chloride-based hand sanitizer showed a steady increase in antibacterial efficacy.

In addition to these objective results, subjects were asked to subjectively evaluate the condition of their hands after the completion of the test protocol. 47% of the subjects who had completed the test protocol with the alcohol-based hand sanitiser reported palmar pain or discomfort and tended to indicate some discomfort in palmar surfaces for one to several days after the test.

In contrast, none of the subjects that used the alcohol-free benzalkonium chloride-based formula reported any pain or discomfort of their hands after completing the test protocol.

### **In summary**

- Benzalkonium chloride based hand sanitisers have a greater sustained antibacterial activity than alcohol based hand sanitisers.
- Alcohol based hand sanitizers became less effective with repeated use and irritated the hands of subjects.
- Benzalkonium chloride based hand sanitiser becomes more effective without irritation after repeated use.

### **Is Whisper 7054 Foam Hand Sanitiser Effective?**

Whisper 7054 Foam Hand Sanitiser 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:

#### **Chlorine Equivalency Test**

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.

#### **Efficacy Result**

Whisper 7054 Foam Hand Sanitiser demonstrated an available chlorine equivalent to greater than the 200 ppm NaOCl standard control when tested against Staphylococcus aureus and Salmonella typhi.

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## 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 <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>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 pneumoniae</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>

For further information consult Material Safety Data Sheet

Available in cartons of 6X800mL Pouches

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