



Bulletin Number: 909

**SYMMETRY NON-ALCOHOL FOAMING HAND SANITIZER  
with Allantoin & Aloe  
Technical Data**

**Physical Properties**

**Active Ingredient:** Benzalkonium Chloride 0.24%

**Appearance:** Clear, Colorless Solution

**Fragrance:** Floral

**Form:** Foam

**pH:**  $7.8 \pm 0.5$

**Preservative Testing**

<b>Objective:</b>	Determination of the effectiveness of the preservative system against repeated bacterial, yeast, and mold challenges.
<b>Test Method:</b>	United States Pharmacopeia/ National Formulary Antimicrobial Effectiveness (Preservative) Test <51>
<b>Description of Test:</b>	Samples of product are inoculated with high levels of bacteria, yeast, and mold to confirm the preservative system will kill these contaminants. The USF/NF protocol was modified to include repeat challenges. The study included all appropriate sterility and neutralization controls.
<b>Test Organisms:</b>	Staphylococcus aureus ATCC 6538 Escherichia coli ATCC 8739 Pseudomonas aeruginosa ATCC 9027 Candida albicans ATCC 10231 Aspergillus niger ATCC 16404
<b>Independent Laboratory:</b>	Clinical Research Laboratories, Inc. (Piscataway, NJ)
<b>Results:</b>	Met and exceeded USP/NF performance requirements after each challenge.

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## **Symmetry Non-Alcohol Foaming Hand Sanitizer with Allantoin & Aloe Technical Data – (Continued)**

### **Repeat Insult Patch Test**

<b>Objective:</b>	Determination of potential for dermal irritation or sensitization.
<b>Test Method:</b>	Repeat Insult Patch Test – Shelanski Method
<b>Description of Test:</b>	Nine applications of product were conducted during the Induction Phase. Applications included applying the product to the same skin site of at least 50 human subjects for 24 hours. Sites were evaluated for irritation throughout the study. After a 10-14 day rest period, product application was repeated on a new skin area to assess the potential for sensitization.
<b>Independent Laboratory:</b>	Clinical Research Laboratories, Inc. (Piscataway, NJ)
<b>Results:</b>	No irritation or sensitization reactions were observed throughout the study.

### **Antimicrobial Effectiveness Studies**

<b>Objective:</b>	Evaluation of antimicrobial effectiveness when challenged with a broad spectrum of microorganisms.
<b>Test Method:</b>	American Society of Testing & Materials E2315 Standard Guide for Assessment of Microbiocidal Activity Using a Time-Kill Procedure
<b>Description of Test:</b>	Samples of product are inoculated with high levels of microorganisms to confirm kill rates after 15 and 30 second contact. Studies included all appropriate sterility and neutralization controls.
<b>Laboratory:</b>	Independent Laboratory

**Symmetry Non-Alcohol Foaming Hand Sanitizer with Allantoin & Aloe  
Technical Data – (Continued)**

Microorganism	Identification No.	Percent Reduction	
		15 Seconds	30 Seconds
Acinetobacter baumannii	ATCC 19606	>99.9998	>99.9998
Clostridium difficile (vegetative)	ATCC 9689	>99.9998	>99.9998
Enterobacter aerogenes	ATCC 13048	>99.9999	>99.9999
Enterococcus faecalis Vancomycin resistant <sup>[1]</sup> (VRE)	ATCC 51299	>99.9998	>99.9998
Enterococcus faecium	ATCC 6569	>99.9999	>99.9999
Escherichia coli	ATCC 11229	>99.9998	>99.9998
Escherichia coli O157:H7	ATCC 35150	>99.9997	>99.9997
Klebsiella pneumoniae	ATCC 13883	>99.9996	>99.9996
Listeria monocytogenes	ATCC 19117	>99.9999	>99.9999
Proteus mirabilis	ATCC 9240	>99.9999	>99.9999
Pseudomonas aeruginosa	ATCC 15442	>99.9999	>99.9999
Salmonella enterica serotype typhimurium	ATCC 14028	>99.9996	>99.9999
Salmonella enterica serotype enteritidis	ATCC 4931	>99.9997	>99.9997
Serratia marcescens	ATCC 14756	>99.9999	>99.9999
Shigella dysenteriae	ATCC 13313	>99.9999	>99.9999
Shigella sonnei	ATCC 25931	>99.9994	>99.9994
Staphylococcus aureus	ATCC 6538	>99.9999	>99.9999
Staphylococcus aureus MRSA <sup>[2]</sup>	ATCC 33592	>99.9999	>99.9999
Staphylococcus aureus CA-MRSA <sup>[3]</sup> (Community Acquired MRSA)	NARSA NRS123 (USA400)	>99.9999	>99.9999
Staphylococcus aureus VRSA	NARSA VRS1	>99.9997	>99.9997
Staphylococcus epidermidis	ATCC 12228	>99.9998	>99.9998

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Streptococcus pneumoniae PRSP	ATCC 700677	>99.9986	>99.9986
Streptococcus pyogenes (GROUP A)	ATCC 19615	>99.9999	>99.9999

ATCC - American Type Culture Collection

NARSA - Network on Antimicrobial Resistance in *Staphylococcus aureus* repository

[1] This test strain was confirmed resistant to Vancomycin, Streptomycin, Quinupristin, and Dalfopristin.

[2] This test strain was confirmed resistant to Methicillin, Clindamycin, Oxacillin, Penicillin, and Tetracycline.

[3] This test strain was confirmed resistant to Methicillin, Oxacillin, and Penicillin.

## Symmetry Non-Alcohol Foaming Hand Sanitizer with Allantoin & Aloe Technical Data – (Continued)

**Test Method:** American Society of Testing & Materials E1052 Standard Test Method for Efficacy of Antimicrobial Agents Against Viruses in Suspension

**Description of Test:** Samples of product are inoculated with high levels of microorganisms to confirm kill rates after 15 and 30 second contact. Studies included all appropriate sterility and neutralization controls.

**Laboratory:** Independent Laboratory

Microorganism	Identification No.	Percent Reduction	
		15 Seconds	30 Seconds
Herpes Simplex Virus Type 1	ATCC VR-733	≥99.994	≥99.994
HIV-1	HTLV-III <sub>B</sub> Strain*	≥99.9	≥99.9683
Influenza A/Hong Kong	ATCC VR-544	≥99.99	≥99.994
Swine Influenza A (H1N1) virus	ATCC VR-333	≥99.99	≥99.99

ATCC - American Type Culture Collection

\*Advanced Biotechnologies, Columbia, MD

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