



## Summary of Studies Performed on SALSHA® Disinfectant / Soak Cleaning Solutions

US EPA Registration No. 70144-1-(31118)

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### DESCRIPTION:

SALSHA Disinfectant and Soak are the EPA approved brand names for a proprietary antimicrobial liquid chemical solution sub-registered to SALSHA Instruments Inc. Meets blood-borne pathogen standard of the Occupational Safety and Health Administration (OSHA), US Department of Labor. Produced adhering to FDA Good Manufacturing Practices.

SALSHA Disinfectant's unique formulation is produced through a combination of a number of solvents, sequestering agents, chelating agents, nonionic detergents and other ingredients acting in synergy with three distinct antimicrobial active agents. This product may be safely applied to soft or hard surfaces as an effective decontaminant / sanitizer / disinfectant / cleaner.

### STUDIES PERFORMED AT INDEPENDENT EPA APPROVED LABORATORIES

#### (1) Bactericidal / Fungicidal Efficacy

Acinetobacter baumannii	Mycobacterium tuberculosis (TB)
Enterobacter aerogenese	Pseudomonas aeruginosa
Escherichia coli (ESBL Strain)	Salmonella choleraesuis
Klebsiella Pneumoniae (Carbapenem Resistant strain)	Serratia marcescens
(KPC)	Staphylococcus aureus
Listeria monocytogenes	Trichophyton mentagrophytes
Methicillin Resistant Staphylococcus Aureus (MRSA)	Vancomycin Resistant Enterococcus (VRE)

#### (2) Virucidal Efficacy

Avian (Bird-flu) Influenza Virus	Human Immunodeficiency Virus (HIV-1)
Hepatitis B Virus (HBV)	Influenza A Viruses
Hepatitis C Virus (HCV)	Rotaviruses
Herpes Simplex Virus (HSV)	Swine Influenza Virus (H1N1 strain)

#### (3) Decontamination / Cleaning Studies

Removal of C. difficile spore contaminated soil

#### (4) Toxicity / Irritation Studies

Oral Toxicity	Dermal Toxicity / Irritation / Sensitization
Inhalation Toxicity	Ocular Irritation

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### <sup>(1)</sup> **Bactericidal / Fungicidal Study Titles:** (AOAC - Association of Official Analytical Chemists)

“AOAC Germicidal Test – Acinetobacter baumannii”

SALSHA Disinfectant passed the spray test at 2 minutes.

“AOAC Non-food Contact Sanitizing Soft Surface Test” - Enterobacter aerogenes

SALSHA Disinfectant passed the AOAC Sanitizer Spray Test at 10 seconds.

“AOAC Escherichia coli (ESBL Strain) Germicidal Test”

SALSHA Disinfectant passed the AOAC Germicidal Spray test with a 2 minute contact time.

“AOAC Klebsiella Pneumoniae (Carbapenem Resistant strain) (KPC) Germicidal Test.

SALSHA Disinfectant passed the AOAC Germicidal Spray test with a 2 minute contact time.

“AOAC Listeria monocytogenes Germicidal Test”

SALSHA Disinfectant passed the AOAC Germicidal Spray test with a 2 minute contact time.

“AOAC Methicillin Resistant Staphylococcus Aureus (MRSA) Germicidal Test”

SALSHA Disinfectant passed the AOAC Germicidal Spray test with a 2 minute contact time.

“AOAC Immersion Test for Determining Tuberculocidal Activity”

The results show SALSHA Disinfectant to be an effective tuberculocidal agent at 2 minutes.

“AOAC Mycobacterium Tuberculocidal Spray Test Study”

SALSHA Disinfectant exhibited no growth of mycobacterium bovis tuberculocidal BCG test at 2 minutes.

“AOAC Confirmative Tuberculocidal Spray Test ”

SALSHA Disinfectant killed mycobacterium bovis BCG at 2 minutes.

“AOAC Germicidal Spray Test- Staphylococcus aureus, Pseudomonas aeruginosa, Salmonella enterica”

SALSHA Disinfectant passed the spray test at 2 minutes.

“AOAC Serratia marcescens Germicidal Test”

SALSHA Disinfectant passed the AOAC Germicidal Spray test with a 2 minute contact time.

“AOAC Non-food -Contact Sanitizing Hard Surface Test” - Staphylococcus aureus and Enterobacter aerogenes

SALSHA Disinfectant passed the AOAC Sanitizer Spray Test at 10 seconds.

“AOAC Food Contact Sanitizing Hard Surface Test” - Escherichia coli (ESBL Strain) and Staphylococcus aureus

SALSHA Disinfectant passed the AOAC Food contact Sanitizing Spray test with a 30-second contact time.

“AOAC Fungicidal Test”

SALSHA Disinfectant exhibited no growth of Trichophyton mentagrophytes at 2 minutes.

“AOAC Vancomycin Resistant Enterococcus (VRE) Germicidal Test”

SALSHA Disinfectant passed the AOAC Germicidal Spray test with a 2 minute contact time.

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### (2) Virucidal Study Titles:

“Effectiveness of SALSHA Disinfectant to Inactivate Avian (Bird flu) Influenza virus”

SALSHA Disinfectant inactivated the Avian Influenza virus with a 2 minute contact time.

“Effectiveness of SALSHA Disinfectant to Inactivate Hepatitis B Virus”

SALSHA Disinfectant inactivated HBV with a 2 minute contact time. “Effectiveness of SALSHA Disinfectant to Inactivate Hepatitis

SALSHA Disinfectant inactivated HCV with a 2 minute contact time.

“Effectiveness of SALSHA Disinfectant to Inactivate Herpes Simplex Virus”

SALSHA Disinfectant inactivated HSV with a 2 minute contact time.

“Effectiveness of SALSHA Disinfectant to Inactivate Human Immunodeficiency Virus Type 1 (HIV-1, associated with AIDS)”

SALSHA Disinfectant inactivated the HIV-1 virus with a 1 minute contact time.

“Effectiveness of SALSHA Disinfectant to Inactivate Influenza A Viruses”

SALSHA Disinfectant inactivated the Influenza A virus with a 2 minute contact time.

“Effectiveness of SALSHA Disinfectant to Inactivate Rotaviruses”

SALSHA Disinfectant inactivated the Rotavirus with a 2 minute contact time.

“Effectiveness of SALSHA Disinfectant Spray to Inactivate the Swine Influenza Type A Virus (H1N1

strain) SALSHA Disinfectant inactivated the Swine Flu Virus (H1N1) with a 2 minute contact time.

### (3) Decontamination / Cleaning Studies

“Efficacy of SALSHA Disinfectant Spray, to Remove *C. difficile* spores from a Hard Surface”

When used as directed SALSHA Disinfectant Solution removed 100% of soil contaminated with  $10^5$  *C. difficile* spores from the tested surfaces.

### (4) Toxicity / Irritation Study Titles

“Oral Toxicity”

SALSHA Disinfectant was tested for potential acute oral toxicity in accordance with the procedure outlined in the Pesticide Assessment Guideline, US EPA. No signs of toxicity were exhibited during the 14-day observation period of this study. Based on the results, the acute oral toxicity LD 50 of SALSHA Disinfectant is greater than 5g/kg of body weight. This product is not considered an oral toxin.

“Acute Inhalation Toxicity”

An acute Inhalation Toxicity Study was conducted to determine the potential for SALSHA Disinfectant to produce toxicity via the inhalation route at an exposure level of 2.0 mg/L. Based on the results, the single exposure Acute Inhalation LD 50 of the test solution is greater than 2.13 mg/L. The test results show this product to be categorized in the safest category (Cat IV) for chemical pesticides and is not a primary inhalation toxin.

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### ” Primary Dermal Irritation”

SALSHA Disinfectant was tested for potential dermal irritation in accordance with the procedures outlined in the Pesticide Assessment Guidelines, US EPA. SALSHA Disinfectant exhibited slight reversible redness during the observation period. Based on the results, SALSHA Disinfectant may produce some reversible, slight skin irritation if directly applied to skin.

### “Acute Dermal Toxicity Study”

SALSHA Disinfectant was tested to evaluate its potential dermal toxicity. The specimens did not exhibit any signs of toxicity during the 14-day observation period following exposure. Based on the results of this study the LD 50 is greater than 2.0 g/kg of body weight and is non-toxic to skin.

### “Primary Eye Irritation Study”

New Zealand Albino Rabbits weighing 2.0-3.0 kg were employed to evaluate the potential irritant effects of SALSHA Disinfectant on the eye mucosa. Based on the criteria outlined in Grades for Ocular Lesions: Pesticide Assessment Guidelines, US EPA, SALSHA Disinfectant produced some slight reversible eye irritation. The results indicate that SALSHA Disinfectant may produce reversible moderate eye irritation when instilled directly into the eye.

Additional information may be obtained from:

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