



## Deb InstantFOAM<sup>®</sup> **Complete** Summary of Microbiological Test Data

ISSUE 3



Make Hands Matter in the Workplace



## About Deb Group

Deb is the world's leading away from home skin care company. Our expertise extends to all occupational sectors with dedicated skin care programmes for organisations who value their employee and customer wellbeing.

For over 80 years, Deb has been at the forefront of research and development into skin care products and dispensing systems. Deb has developed partnerships in the industrial, healthcare, food, catering, hospitality and leisure markets to help strengthen organisations' health, safety and hygiene programmes. Supported by a dedicated skin care sales team, our core purpose is creating health and safety culture to truly make hands matter.



Industry



Food Processing  
& Food Service



Commercial



Healthcare

# Contents

This brochure provides summary information on the microbiological test conducted on Deb InstantFOAM® Complete

<b>PAGE 3</b>	- Deb InstantFOAM® Complete Introduction	<b>PAGE 7</b>	- EN13624 - Yeasticidal & Fungicidal - EN 14476 - Virucidal – poliovirus type 1
<b>PAGE 4</b>	- EN 1276 - Bactericidal - EN 13727 - Bactericidal	<b>PAGE 8</b>	- EN 14476 - Virucidal - adenovirus type 5 - EN 14476 - Virucidal - murine norovirus (as a surrogate for human norovirus)
<b>PAGE 5</b>	- EN 1500 - Bactericidal - EN 12791 - Bactericidal (Surgical Rub)	<b>PAGE 9</b>	- In vivo Virucidal ASTM E2011-13 – Murine Norovirus - In vivo Virucidal ASTM E1838-10 - Murine Norovirus
<b>PAGE 6</b>	- EN 14348 - Tuberculocidal - EN 1650 - Yeasticidal & Fungicidal	<b>PAGE 10</b>	- In vitro – Bactericidal, Yeasticidal and Fungicidal ASTM E2783-11

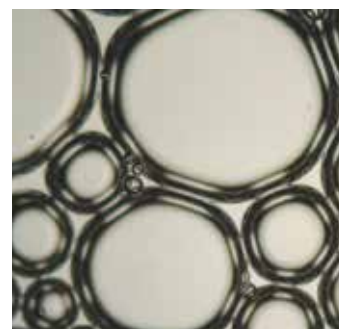
## Deb InstantFOAM® Complete



### Alcohol-Based Foam Hand Disinfectant

Bactericidal | Virucidal | Yeasticidal | Mycobactericidal

Deb InstantFOAM® Complete has been specifically developed to provide a complete solution for hand disinfectant in one product, suitable for all environments where high levels of hand hygiene are desired. The product is a highly effective broad spectrum alcohol-based liquid sanitiser dispensed as a foam. It is the world's first alcohol foam hand sanitiser proven to be both bactericidal and fully virucidal.



100 x magnification of Deb InstantFOAM®



## In vitro bactericidal EN 1276

### Objective:

This European Standard is a quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas.

#### General Study Information

<b>Protocol:</b>	EN1276:2009
<b>Test House:</b>	Dr Brill + Dr Steinmann Labs GmbH
<b>Date of Report:</b>	13th March 2015
<b>Report Ref:</b>	L15/0070.2
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	11/03/2015 - 13/03/2015

### Test Results:

All test bacteria were sufficiently (RF >5) inactivated with the following concentration-time relationship: clean conditions, 50% (v/v), 30 seconds.

#### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	DOM 02/02/15
<b>Product Test Concentrations:</b>	80%, 50% and 10% (v/v end concentrations)
<b>Diluent:</b>	Distilled water (DW, pH 7.0)
<b>Test Temperature:</b>	20°C ± 1°C
<b>Incubation Temperature:</b>	36°C ± 1°C
<b>Neutraliser:</b>	30 g/L polysorbate 80, 30g/ L saponine, 3g/L lecithin, 1g/L histidine, 5g/L sodium thiosulphate (TLSH-Nt)
<b>Conditions:</b>	Clean conditions
<b>Interfering substance:</b>	0.3 g/L bovine albumine
<b>Test Strains:</b>	<i>Staphylococcus aureus</i> ATCC 6538 <i>Escherichia coli</i> ATCC 10536 <i>Enterococcus hirae</i> ATCC 10541 <i>Pseudomonas aeruginosa</i> ATCC 15442
<b>Contact Time:</b>	30 seconds

### Study Conclusion:

According to DIN EN1276:2009 (phase 2, step 1), Deb InstantFOAM® Complete possesses bactericidal activity >5 log 99.999% in 30 seconds at 20°C for the reference strains *Staphylococcus aureus*, *Enterococcus hirae*, *Escherichia coli* & *Pseudomonas aeruginosa* when diluted at 50% (v/v).

## In vitro bactericidal EN 13727

### Objective:

This European Standard is a quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in the medical area.

#### General Study Information

<b>Protocol:</b>	EN13727:2013
<b>Test House:</b>	Dr Brill + Dr Steinmann Labs GmbH
<b>Date of Report:</b>	11th March 2015
<b>Report Ref:</b>	L15/0070.3
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	20/02/2015 - 23/02/2015

### Test Results:

All test bacteria were sufficiently (Log RF >5) inactivated with the following concentration-time relationship: clean conditions, 80% (v/v), 30 seconds.

#### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	DOM 02/02/15
<b>Product Test Concentrations:</b>	80%, 50% and 10% (v/v end concentrations)
<b>Diluent:</b>	Distilled water (DW, pH 7.0)
<b>Test Temperature:</b>	20°C ± 1°C
<b>Incubation Temperature:</b>	36°C ± 1°C
<b>Neutraliser:</b>	30 g/L polysorbate 80, 30g/ L saponine, 3g/L lecithin, 1g/L histidine, 5g/L sodium thiosulphate (TLSH-Nt)
<b>Conditions:</b>	Clean conditions
<b>Interfering substance:</b>	0.3 g/L bovine albumine
<b>Test Strains:</b>	<i>Staphylococcus aureus</i> ATCC 6538 <i>Escherichia coli</i> ATCC 10536 <i>Enterococcus hirae</i> ATCC 10541 <i>Pseudomonas aeruginosa</i> ATCC 15442
<b>Contact Time:</b>	30 seconds

### Study Conclusion:

According to DIN EN 13727:2013 (phase 2, step 1), Deb InstantFOAM® Complete possesses bactericidal activity >5 log (99.999%) in 30 seconds at 20°C for the reference strains *Staphylococcus aureus*, *Enterococcus hirae*, *Escherichia coli* & *Pseudomonas aeruginosa* when diluted at 80% (v/v).

## In vivo bactericidal EN 1500

### Objective:

This European Standard specifies an in vivo test for assessing hygienic handrubs. The method of test simulates practical conditions for establishing whether a product for hygienic handrub reduces the release of transient flora when rubbed onto the artificially contaminated hands of volunteers. To meet the standard, test products must perform no worse than the reference product propan-2-ol.

### General Study Information

<b>Protocol:</b>	EN1500:2013
<b>Test House:</b>	HygCen GmbH Schwerin, Germany
<b>Date of Report:</b>	16th December 2014
<b>Report Ref:</b>	SN 17931
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	11/12/2014 - 13/12/2014

### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	DOM 02/02/15
<b>Product Test Concentrations:</b>	100% (Neat)
<b>Test Strain:</b>	<i>Escherichia coli</i> NCTC 10538
<b>Exposure Time:</b>	30 seconds
<b>Neutraliser:</b>	3,0 % Tween 80 + 3,0 % Saponine + 0,1 % Histidin + 0,1 % Cystein (TSHC) / 3,0 % polysorbate 80 + 3,0 % saponin + 0,1 % histidine + 0,1 % cysteine (TSHC)
<b>Reference Procedure:</b>	2 x 3ml 60% (v/v) propan-2-ol, rubbed onto the hands during 60 seconds
<b>Test Procedure:</b>	Rub the hands with 3 ml of product AA72 for 30 seconds.

### Test Results:

From the critical values for Wilcoxon`s matched-pairs signed-ranks test the entry for n=20 and a one-sided 0.025 level of significance the critical value of 52 is found - hence  $c=52+1=53$ . The 53rd value is 0.39. Hence the Hodges-Lehmann upper one-sided 97.5% confidence limit for the difference in log reductions between reference and AA72 is 0.39, which is less than the agreed inferiority margin of 0.6. Therefore it can be concluded that AA72 is non- inferior to the reference.

### Study Conclusion:

The test product Deb InstantFOAM® Complete (AA72) is suitable for the hygienic hand rub according to DIN EN1500:2013 (phase 2, step 2) with the following application - Rub the hands with 3 ml of product for 30 seconds.

## In vivo bactericidal (Surgical Rub) EN 12791

### Objective:

The European Standard for products to be used for surgical hand disinfection (surgical rubs) is an in vivo test that assesses the efficacy of the test product in reducing the transient flora on volunteers` hands both immediately and after a 3 hour period. To meet the standard, test products must perform no worse than the reference product n-propanol.

### General Study Information

<b>Protocol:</b>	EN12971:2005
<b>Test House:</b>	Dr Brill + Dr Steinmann Labs GmbH
<b>Date of Report:</b>	11th March 2015
<b>Report Ref:</b>	L15/0070.8
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	23/02/2015 - 05/03/2015

### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	DOM 05/02/15
<b>Product Test Concentrations:</b>	100% (Neat)
<b>Test Strain:</b>	Distilled water (DW, pH 7.0)
<b>Test Temperature:</b>	N/A
<b>Reference Procedure:</b>	3ml aliquots of 60% n-Propanol rubbed on the hands, repeated sufficiently to maintain wet hands for 3 minutes
<b>Test Procedure:</b>	3ml aliquots of the test product rubbed on the hands, repeated sufficiently to maintain wet hands for 3 minutes

### Test Results:

According to Wilcoxon test the differences between reductions of standard product and Deb InstantFOAM® Complete for immediate and three hour effect was not significant. Therefore the preparation Deb InstantFOAM® Complete did show sufficient activity for surgical hand disinfection in the practice-like test with an application rate of 3 ml portions (hands kept wet) and an exposure time of 3 minutes.

### Study Conclusion:

Deb InstantFOAM® Complete proved to be suitable for surgical hand rub in a practice-like trial with 19 test persons. The requirements of DIN EN 12791:2005 (phase 2, step 2) were fulfilled with a use concentration of 100% kept wet for a contact time of 3 minutes.

## In vitro mycobactericidal EN 14348

### Objective:

Quantitative suspension test for the evaluation of Mycobactericidal activity of chemical disinfectants used in the medical area including instrument disinfectants.

#### General Study Information

<b>Protocol:</b>	EN14348:2005
<b>Test House:</b>	Dr Brill + Dr Steinmann Labs GmbH
<b>Date of Report:</b>	17th March 2015
<b>Report Ref:</b>	L15/0070.1
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	17/02/2015 - 10/03/2015

### Test Results:

*Mycobacterium terrae* and *Mycobacterium avium* were sufficiently ( $\log RF \rightarrow 4$ ) inactivated with the following concentration-time relationship: clean conditions, 80% (v/v), 30 seconds

#### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	DOM 02/02/15
<b>Product Test Concentrations:</b>	80%, 50% and 10% (v/v end concentrations)
<b>Diluent:</b>	Distilled water (DW, pH 7.0)
<b>Test Temperature:</b>	20°C ± 1°C
<b>Incubation Temperature:</b>	30°C ± 1°C
<b>Neutraliser:</b>	30 g/L polysorbate 80, 30g/ L saponine, 3g/L lecithin, 1g/L histidine, 5g/L sodium thiosulphate (TLSH-Nt)
<b>Conditions:</b>	Clean conditions
<b>Interfering substance:</b>	0.3 g/L bovine albumine
<b>Test Strains:</b>	<i>Mycobacterium terrae</i> ATCC 15755, <i>Mycobacterium avium</i> ATCC 15769
<b>Contact Time:</b>	30 seconds

### Study Conclusion:

Deb InstantFOAM® Complete (AA72) showed tuberculocidal and mycobactericidal activity under clean conditions and complies with the requirements of DIN EN 14348:2005 (phase 2, step 1) with the following concentration-time relationship: 80% (v/v), 30 seconds.

## In vitro Yeasticidal & Fungicidal EN 1650

### Objective:

Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants in food, industrial, domestic and institutional areas.

#### General Study Information

<b>Protocol:</b>	EN1650:2013
<b>Test House:</b>	Dr Brill + Dr Steinmann Labs GmbH
<b>Date of Report:</b>	13th March 2015
<b>Report Ref:</b>	L15/0070.5
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	11/03/2015 - 13/03/2015

### Test Results:

The test organisms were sufficiently ( $\log RF > 4$ ) inactivated with the following concentration-time relationship:

- *Candida albicans*: clean conditions, 50% (v/v), 30 seconds.
- *Aspergillus brasiliensis*: clean conditions 80% (v/v), 5 minutes.

#### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	DOM 02/02/15
<b>Product Test Concentrations:</b>	80%, 50% and 10% (v/v end concentrations)
<b>Diluent:</b>	Distilled water (DW, pH 7.0)
<b>Test Temperature:</b>	20°C ± 1°C
<b>Incubation Temperature:</b>	36°C ± 1°C
<b>Neutraliser:</b>	30 g/L polysorbate 80, 30g/ L saponine, 3g/L lecithin, 1g/L histidine, 5g/L sodium thiosulphate (TLSH-Nt)
<b>Conditions:</b>	Clean conditions
<b>Interfering substance:</b>	0.3 g/L bovine albumine
<b>Test Strains:</b>	<i>Candida albicans</i> ATCC 10231 <i>Aspergillus brasiliensis</i> ATCC 16404
<b>Contact Time:</b>	30 seconds and 5 minutes

### Study Conclusion:

Deb InstantFOAM® Complete (AA72) showed fungicidal and yeasticidal activity under clean conditions and complies with the requirements of DIN EN 1650:2013 (phase 2, step 1) with the following concentration-time relationship:

- Yeasticidal: clean conditions, 50% (v/v), 30 seconds
- Fungicidal: clean conditions, 80% (v/v), 5 minutes

## In vitro Yeasticidal & Fungicidal EN 13624

### Objective:

Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants in the medical area.

#### General Study Information

<b>Protocol:</b>	EN13624:2013
<b>Test House:</b>	Dr Brill + Dr Steinmann Labs GmbH
<b>Date of Report:</b>	11th March 2015
<b>Report Ref:</b>	L15/0070.4
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	20/02/2015 - 23/02/2015

#### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	DOM 02/02/15
<b>Product Test Concentrations:</b>	80%, 50% and 10% (v/v end concentrations)
<b>Diluent:</b>	Distilled water (DW, pH 7.0)
<b>Test Temperature:</b>	20°C ± 1°C
<b>Incubation Temperature:</b>	30°C ± 1°C
<b>Neutraliser:</b>	30 g/L polysorbate 80, 30g/ L saponine, 3g/L lecithin, 1g/L histidine, 5g/L sodium thiosulphate (TLSH-Nt)
<b>Conditions:</b>	Clean conditions
<b>Interfering substance:</b>	0.3 g/L bovine albumine
<b>Test Strains:</b>	<i>Candida albicans</i> ATCC 10231 <i>Aspergillus brasiliensis</i> ATCC 16404
<b>Contact Time:</b>	30 seconds and 5 minutes

### Test Results:

The test organisms were sufficiently (log RF >4) inactivated with the following concentration-time relationship:

- *Candida albicans*: clean conditions, 50% (v/v), 30 seconds and 80% (v/v), 5 minutes
- *Aspergillus brasiliensis*: clean conditions 80% (v/v), 5 minutes.

### Study Conclusion:

Deb InstantFOAM® Complete (AA72) showed fungicidal and yeasticidal activity under clean conditions and complies with the requirements of DIN EN13624:2013 (phase 2, step 1) with the following concentration-time relationship:

- Yeasticidal: clean conditions, 50% (v/v), 30 seconds and 80% (v/v), 5 minutes
- Fungicidal: clean conditions, 80% (v/v), 5 minutes

## In vitro Virucidal EN 14476 – poliovirus type 1

### Objective:

This standard is a quantitative suspension test for the evaluation of virucidal activity of chemical disinfectants and antiseptics used in the medical area. The standard applies to areas and situations where disinfection is medically intended. Such indications occur in patient care; for example in hospitals, community medical facilities, dental institutions, clinics in schools, kindergartens, nursing homes and may occur in the workplace or the home.

#### General Study Information

<b>Protocol:</b>	EN14476:2013
<b>Test House:</b>	Dr Brill + Dr Steinmann Labs GmbH
<b>Date of Report:</b>	11th July 2016
<b>Report Ref:</b>	D1620254Po1
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	13/04/16 - 11/07/16

#### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	MS 5/175/2
<b>Product Test Concentrations:</b>	Undiluted (97% and 80%) and as 50% and 10% (demonstration of non-active range) v/v solutions
<b>Diluent:</b>	Water
<b>Test Temperature:</b>	20°C ± 1°C
<b>Appearance of product dilutions:</b>	No precipitation
<b>Conditions:</b>	Clean conditions
<b>Interfering substance:</b>	0.3 g/L bovine serum albumin
<b>Procedure to stop action of disinfectant:</b>	Immediate dilution
<b>Stability of product in the mix with virus and interfering substance:</b>	97% and 80% - minor clouding, minor precipitation
<b>Virus Strains:</b>	Poliovirus type 1 strain LSc-2ab (Chiron-Behring)
<b>Contact Time:</b>	30, 40 & 50 seconds and 30 minutes

### Test Results:

The undiluted product (97% assay) was able to inactivate poliovirus type 1 after 40 seconds in the quantitative suspension test. The mean reduction factor was  $>4.25 \pm 0.23$ . The mean value corresponds to an inactivation of  $\geq 99.99\%$ .

### Study Conclusion:

The hand disinfectant Deb InstantFOAM® Complete tested undiluted demonstrated effectiveness against poliovirus type 1 after an exposure time of 40 seconds under clean conditions. Therefore the hand disinfectant Deb InstantFOAM® Complete can be declared as active against poliovirus type 1 as follows: undiluted, 40 seconds.

## In vitro Virucidal EN 14476 – adenovirus type 5

### Objective:

This standard is a quantitative suspension test for the evaluation of virucidal activity of chemical disinfectants and antiseptics used in the medical area. The standard applies to areas and situations where disinfection is medically intended. Such indications occur in patient care; for example in hospitals, community medical facilities, dental institutions, clinics in schools, kindergartens, nursing homes and may occur in the workplace or the home.

### General Study Information

<b>Protocol:</b>	EN14476:2013
<b>Test House:</b>	Dr Brill + Dr Steinmann Labs GmbH
<b>Date of Report:</b>	7th November 2014
<b>Report Ref:</b>	D14ML1799A
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	02/10/2014 - 25/11/2014

### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	01102014SL
<b>Product Test Concentrations:</b>	Undiluted (80%) and as 50% and 10% (demonstration of non-active range) v/v solutions
<b>Diluent:</b>	Water
<b>Test Temperature:</b>	20°C ± 1°C
<b>Appearance of product dilutions:</b>	No precipitation
<b>Conditions:</b>	Clean conditions
<b>Interfering substance:</b>	0.3 g/L bovine serum albumin
<b>Procedure to stop action of disinfectant:</b>	Immediate dilution
<b>Stability of product in the mix with virus and interfering substance:</b>	80% - no precipitation, no flocculation.
<b>Virus Strains:</b>	adenovirus type 5 strain adenoid 75 (ATCC VR-5)
<b>Contact Time:</b>	30 seconds, 60 seconds and 30 minutes

### Test Results:

The undiluted product (80% assay) was able to inactivate adenovirus type 5 after 30 seconds in the quantitative suspension test. The mean reduction factor was  $4.75 \pm 0.31$ . The mean value corresponds to an inactivation of  $\geq 99.99\%$ .

### Study Conclusion:

The hand disinfectant Deb InstantFOAM® Complete tested undiluted demonstrated effectiveness against adenovirus type 5 after an exposure time of 30 seconds under clean conditions. Therefore the hand disinfectant Deb InstantFOAM® Complete can be declared as active against adenovirus type 5 as follows: undiluted, 30 seconds.

## In vitro Virucidal EN 14476 – murine norovirus (as a surrogate of human norovirus)

### Objective:

This standard is a quantitative suspension test for the evaluation of virucidal activity of chemical disinfectants and antiseptics used in the medical area. The standard applies to areas and situations where disinfection is medically intended. Such indications occur in patient care; for example in hospitals, community medical facilities, dental institutions, clinics in schools, kindergartens, nursing homes and may occur in the workplace or the home.

### General Study Information

<b>Protocol:</b>	EN14476:2013
<b>Test House:</b>	Dr Brill + Dr Steinmann Labs GmbH
<b>Date of Report:</b>	7th November 2014
<b>Report Ref:</b>	D14ML1799M
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	02/10/2014 - 12/11/2014

### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	01102014SL
<b>Product Test Concentrations:</b>	Undiluted (80%) and as 50% and 10% (demonstration of non-active range) v/v solutions
<b>Diluent:</b>	Water
<b>Test Temperature:</b>	20°C ± 1°C
<b>Appearance of product dilutions:</b>	No precipitation
<b>Conditions:</b>	Clean conditions
<b>Interfering substance:</b>	0.3 g/L bovine serum albumin
<b>Procedure to stop action of disinfectant:</b>	Immediate dilution
<b>Stability of product in the mix with virus and interfering substance:</b>	80% - no precipitation, no flocculation.
<b>Virus Strains:</b>	murine norovirus (Berlin 06/06/DE Isolate S99)
<b>Contact Time:</b>	30 seconds, 60 seconds and 30 minute

### Test Results:

The undiluted product (80%) was able to inactivate murine norovirus after 30 seconds in the quantitative suspension test. The mean reduction factor was  $5.13 \pm 0.37$ . The mean value corresponds to an inactivation of  $\geq 99.999\%$ .

### Study Conclusion:

The hand disinfectant Deb InstantFOAM® Complete tested undiluted demonstrated effectiveness against murine norovirus after an exposure time of 30 seconds under clean conditions. Therefore the hand disinfectant Deb InstantFOAM® Complete can be declared as active against murine norovirus as follows: undiluted, 30 seconds.



## In vivo Virucidal ASTM E2011-13 – Murine Norovirus (as a surrogate of Human Norovirus) and Rhinovirus Type 14

### Objective:

This test method is designed to evaluate the virus-eliminating activity of hygienic handwash and handrub agents from experimentally-contaminated hands. This test method incorporates whole-hand exposure and reflects actual use conditions such as friction during hand decontamination, and also enables alternative product forms such as alcohol- or non-alcohol-based liquids, gels, and foams to be tested according to label directions.

### General Study Information

<b>Protocol:</b>	ASTM E2011-13
<b>Test House:</b>	Bioscience Laboratories Inc
<b>Date of Report:</b>	6th October 2015
<b>Report Ref:</b>	150504-111
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	06/08/2015 - 31/08/2015

### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	MS5/71/1
<b>Product Test Concentrations:</b>	100% (neat)
<b>Test Strain:</b>	Murine Norovirus strain S99 (FLI Virusbank #RVB-651) Rhinovirus Type 14 (ATCC #VR-284)
<b>Exposure Time:</b>	30 seconds
<b>Test Procedure:</b>	Rub the hands with 3 ml of product AA72 for 30 seconds.
<b>Control Solution:</b>	Earle's Balanced Salt Solution (EBSS)

### Study Conclusion:

**Murine Norovirus:** the test product, Deb Instant Foam Complete produced a 4.25 log<sub>10</sub> mean reduction from baseline (the mean value corresponds to an inactivation of ≥ 99.99%) and a 3.50 log<sub>10</sub> mean reduction from the control EBSS solution (the mean value corresponds to an inactivation of 99.97%) when challenged with Murine Norovirus strain S99 (FLI Virusbank #RVB-651).

**Rhinovirus:** the test product, Deb Instant Foam Complete produced a 3.30 log<sub>10</sub> mean reduction from baseline (the mean value corresponds to an inactivation of 99.95%) and a 2.55 log<sub>10</sub> mean reduction from the control EBSS solution (the mean value corresponds to an inactivation of 99.72%) when challenged with Rhinovirus Type 14 (ATCC #VR-284).

## In vivo Virucidal ASTM E1838-10 - Pilot Study of Murine Norovirus (as a surrogate of Human Norovirus) and Rhinovirus Type 14

### Objective:

This test procedure is designed to test the ability of hygienic handwash and handrub agents to reduce levels of selected infectious viruses from experimentally contaminated fingerpads of adults. Since the two thumbpads and all eight fingerpads can be used in any given test, it allows for the incorporation of input virus control (two), virus remaining viable after the inoculum has been allowed to dry (two), virus eliminated after treatment with a control or reference solution (two), and up to four replicates to assess the virus-eliminating efficiency of the substance under test.

### General Study Information

<b>Protocol:</b>	ASTM E1838-10
<b>Test House:</b>	Bioscience Laboratories Inc
<b>Date of Report:</b>	1st October 2015
<b>Report Ref:</b>	150504-111
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	07/09/2015 - 01/10/2015

### Summary of Test Conditions

<b>Test Product:</b>	Deb InstantFOAM® Complete (AA72)
<b>Batch Number:</b>	MS5/71/1
<b>Product Test Concentrations:</b>	100% (neat)
<b>Test Strain:</b>	Murine Norovirus strain S99 (FLI Virusbank #RVB-651) Rhinovirus Type 14 (ATCC #VR-284)
<b>Exposure Time:</b>	30 seconds
<b>Test Procedure:</b>	Vial of test product inverted and content allowed to remain in contact with the fingerpad for 30 seconds

### Study Conclusion:

**Murine Norovirus:** the test product, Deb Instant Foam Complete produced a 3.79 log<sub>10</sub> mean reduction when challenged with Murine Norovirus strain S99 (FLI Virusbank #RVB-651).

**Rhinovirus:** the test product, Deb Instant Foam Complete produced a 3.54 log<sub>10</sub> mean reduction when challenged with Rhinovirus Type 14 (ATCC #VR-284).

**Objective:**

This test method measures the changes of a population of aerobic and anaerobic microorganisms within a specific sampling time when tested against antimicrobial test materials in vitro. The organisms used are standardized as to growth requirements and inoculum preparation and must grow under the conditions of the test. The primary purpose of this test method is to provide a set of standardized conditions and test organisms to facilitate comparative assessments of antimicrobial materials miscible in aqueous systems

**General Study Information**

<b>Protocol:</b>	ASTM E2783-11
<b>Test House:</b>	Bioscience Laboratories Inc
<b>Date of Report:</b>	11th November 2015
<b>Report Ref:</b>	150826-201
<b>Test Product:</b>	Deb InstantFOAM® Complete
<b>Study Dates:</b>	09/10/2015 - 10/11/2015

**Results and Conclusions:**

Deb Instant FOAM® Complete reduced the microbial population of 55 species by greater than 5 log<sub>10</sub> reduction following 15 second exposure. The microbial populations of *Clostridium difficile* [ATCC #9689, vegetative cells] and *Streptococcus pyogenes* [ATCC #19615] were reduced by greater than 4 log<sub>10</sub> reduction following 15 second exposure to Deb Instant FOAM Complete. The microbial population of *Epidermophyton floccosum* [ATCC #52063] was reduced by 3.9 log<sub>10</sub> reduction following 15 second exposure.

**Summary of Test Conditions**

The test product was brought into contact with a known population of micro-organisms for 15 seconds. The test article was neutralised at the sampling time (15 seconds) and the surviving micro-organisms were enumerated. The percent reduction and log<sub>10</sub> reduction from an initial microbial population was calculated.

<b>Test Product:</b>	Deb InstantFOAM® Complete [AA72]
<b>Batch Number:</b>	2508
<b>Product Test Concentrations:</b>	100% (neat)
<b>Exposure Time:</b>	15 seconds

**Test Organisms:**

*Acinetobacter baumannii* [ATCC #19606], *Aspergillus brasiliensis* [ATCC #6275], *Aspergillus flavus* [ATCC #9643], *Bacillus megaterium*; vegetative cells [ATCC #14581], *Bacteroides fragilis* [ATCC #29762], *Burkholderia cepacia* [ATCC #25416], *Campylobacter jejuni* [ATCC #29428], *Candida albicans* [ATCC #10231], *Candida tropicalis* [ATCC #13803], *Citrobacter freundii* [ATCC #8090] *Clostridium difficile*; vegetative cells [ATCC #9689], *Clostridium perfringens*; vegetative cells [ATCC #13124], *Corynebacterium diphtheria* [ATCC #11913], *Enterobacter aerogenes* [ATCC #13048], *Enterococcus faecalis* [ATCC #29212], *Enterococcus faecium* MDR, VRE [ATCC #51559], *Enterococcus hirae* [ATCC #10541], *Escherichia coli* [ATCC #11229], *Escherichia coli* [ATCC #25922], *Escherichia coli* serotype O157:H7 [ATCC #43888], *Escherichia coli* serotype O157:H7 [ATCC #35150], *Epidermophyton floccosum* [ATCC #52063], *Haemophilus influenzae* MDR [ATCC #33930], *Klebsiella pneumoniae ozaenae* [ATCC #11296], *Klebsiella pneumoniae* [ATCC #13883], *Lactobacillus plantarum* [ATCC #14917], *Listeria monocytogenes* [ATCC #7644], *Listeria monocytogenes* [ATCC #15313], *Micrococcus yunnanensis* [ATCC #7468], *Penicillium citrinum* [ATCC #9849], *Proteus hauseri* [ATCC #13315], *Proteus mirabilis* [ATCC #7002], *Pseudomonas aeruginosa* [ATCC #27853], *Salmonella entericaserovar Choleraesuis* [ATCC #10708], *Salmonella entericaserovar Enteritidis* [ATCC #13076], *Salmonella entericaserovar Typhimurium* [ATCC #14028], *Serratia marcescens* [ATCC #14756], *Shigella dysenteriae* [ATCC #13313], *Shigella sonnei* [ATCC #11060], *Staphylococcus aureus* [ATCC #6538], *Staphylococcus aureus* [ATCC #29213], *Staphylococcus aureus* MRSA [ATCC #33591], *Staphylococcus aureus* MRSA [BSLI #060613MRSA1], *Staphylococcus aureus* MRSA, NRS382, USA100 [BSLI #092711SaNRS382], *Staphylococcus aureus* MRSA, NRS383, USA200 [BSLI #092711SaNRS383], *Staphylococcus aureus* MRSA, NRS384, USA300 [BSLI #092711SaNRS384], *Staphylococcus aureus* MRSA, NRS123, USA400 [BSLI #092711SaNRS123], *Staphylococcus aureus* MRSA, NRS385, USA500 [BSLI #090215SaNRS385], *Staphylococcus aureus* MRSA, NRS483, USA1000 [BSLI #090215SaNRS483], *Staphylococcus aureus* MRSA, NRS484, USA1100 [BSLI #090215SaNRS484], *Staphylococcus epidermidis* [ATCC #12228], *Staphylococcus haemolyticus* [ATCC #43252], *Staphylococcus hominis* [ATCC #27845], *Staphylococcus saprophyticus* [ATCC #49453], *Streptococcus pneumoniae* [ATCC #33400], *Streptococcus pyogenes* [ATCC #19615], *Trichophyton mentagrophytes* [ATCC #9533], *Vibrio cholera* [ATCC #11558]

For further help and advice contact your nearest Deb Group Office:

**GROUP HEAD OFFICE  
& GLOBAL R&D CENTRE**

Deb Group Limited  
Denby Hall Way  
Denby  
Derbyshire  
DE5 8JZ  
UK  
T: +44 1773 855100  
F: +44 1773 855107

**NATIONAL OFFICES**

**AUSTRALIA**

Deb Australia Pty Limited,  
Unit 1, 1 Secombe Place,  
Moorebank, NSW,  
Australia 2170  
T: +61 (0) 2 8763 1800  
F: +61 (0) 2 8763 1899

**BENELUX**

Deb-STOKO Europe GmbH,  
PO Box 10 05 51,  
47805 Krefeld, Duitsland  
T: +31 13 456 1915 (N)  
F: +31 13 456 2848 (N)  
T: +32 2 461 0575 (B)  
F: +49 2151 7380 1502 (B)

**CANADA**

Deb Canada  
42 Thompson Road W.  
Waterford  
Ontario N0E 1Y0  
T: +1 888 332 7627  
T: +1 519 443 8697  
F: +1 800 567 1652  
F: +1 519 443 5160

**DENMARK**

Deb Swarfega A/S  
Agerhatten 27B  
5220 Odense SØ  
T: +45 6472 2400  
F: +45 6472 3300

**FRANCE**

Deb Arma  
Batiment A - Hall 2  
3/5 rue du Pont des Halles  
94656 RUNGIS CEDEX  
T: +33 1 41 80 11 30  
F: +33 1 41 80 11 69

**GERMANY**

Deb STOKO Europe GmbH,  
Girmesgath 5, 47803 Krefeld,  
Deutschland  
T: +49 (0) 2151 7380-0

**NEW ZEALAND**

Deb New Zealand Limited  
PO Box 97-740  
Manukau, Auckland, New Zealand  
T: +64 3 545 1046  
F: +64 3 545 1047

**NORWAY**

Deb Swarfega Norge A/S  
Trollåsveien 4  
1414 Trollåsen  
T: +47 6680 3440  
F: +47 6680 3110

**SINGAPORE**

Deb Singapore Pte. Ltd.  
7 Kaki Bukit Road 1  
#01-10 Eunos Technolink  
Singapore 415937  
T: +65 6316 9730  
F: +65 6316 9731

**SPAIN**

Deb Iberia S.L,  
Paseo de Europa 11-13,  
28700 San Sebastián de los Reyes,  
Madrid, España  
T: +34 (0) 91 651 4870  
F: +34 (0) 91 653 2554

**SWEDEN**

Deb Sverige AB  
Skårs Led 3  
412-63 Göteborg  
T: +46 31 165 050  
F: +46 31 406 053

**UK & IRELAND**

Deb Limited  
Denby Hall Way  
Denby  
Derbyshire  
DE5 8JZ  
T: +44 1773 855100  
F: +44 1773 855107

**USA**

2815 Coliseum Centre Dr.,  
Suite 600 Charlotte,  
NC 28217  
T: +1 704 263 4240  
F: +1 704 263 9601



**Make Hands Matter in the Workplace**