



CAVIWIPES®

Technical Bulletin

CaviWipes Disinfecting Towelettes are non-woven disposable towelettes pre-saturated with CaviCide. CaviWipes are intended for use in health care settings such as hospitals, laboratories, clinics, dental offices, ophthalmic offices and veterinary facilities. CaviWipes are effective against the following microorganisms on hard, non-porous surfaces when used as directed with a contact time of 3 minutes:

Mycobacterium bovis BCG
Staphylococcus aureus
Pseudomonas aeruginosa
Salmonella enterica
Multi-Drug Resistant (MDR) *Acinetobacter baumannii*
Klebsiella pneumonia
Bordetella pertussis
Extended Spectrum β -lactamase *Escherichia coli* (ESBL)
Methicillin Resistant *Staphylococcus aureus* (MRSA)
Vancomycin Resistant *Enterococcus faecalis* (VRE)
Staphylococcus aureus with Reduced Susceptibility to Vancomycin
Trichophyton mentagrophytes
Candida albicans
Herpes Simplex Virus Type 1
Herpes Simplex Virus Type 2
Human Immunodeficiency Virus (HIV-1)
Hepatitis C Virus (HCV)
Coronavirus
Influenza A2 Virus

Tuberculocidal Efficacy Studies:

Mycobacterium bovis BCG

“Testing Pre-Saturated or Impregnated Towelettes for Tuberculocidal Effectiveness”
MicroBiotest, Inc. April 12, 1999. Lab ID # 198-148.
Conclusion: When tested as described, CaviWipes is an effective tuberculocidal agent.

“Testing Pre-Saturated or Impregnated Towelettes for Tuberculocidal Effectiveness”
MicroBiotest, Inc. April 21, 2006. Lab ID # 198-350.
Conclusion: When tested as described CaviWipes/CaviWipes XL passed the Testing Pre-Saturated or Impregnated Towelettes for Tuberculocidal Effectiveness test when *M. bovis* was exposed to the test agent as described in the test conditions section for 3 minutes at 20±2°C.

Bactericidal Efficacy Studies:

Staphylococcus aureus

Pseudomonas aeruginosa

Salmonella enterica

Multi-Drug Resistant (MDR) *Acinetobacter baumannii*

Klebsiella pneumonia

Bordetella pertussis

Extended Spectrum β -lactamase *Escherichia coli* (ESBL)

“Testing Pre-Saturated or Impregnated Towelettes for Hard Surface Disinfection”

MicroBiotest, Inc. May 28, 1999. Lab ID # 198-143.

Conclusion: When tested as described, against *Staphylococcus aureus*, *Pseudomonas aeruginosa* and *Salmonella enterica (choleraesuis)*, CaviWipes meets the EPA established criteria for an effective pre-saturated or impregnated towelette for hard surface disinfection.

“Testing Pre-Saturated or Impregnated Towelettes for Hard Surface Disinfection Supplemental-Multi-Drug Resistant *Acinetobacter baumannii*”

Microbiotest. November 30, 2010. Lab # 198-611

Conclusion: CaviWipes/CaviWipes XL passed the “Testing Pre-Saturated or Impregnated Towelettes for Hard Surface Disinfection – Supplemental” test when Multi-Drug Resistant *Acinetobacter baumannii*, containing a 5% organic load, was exposed to the test agent for three minutes at 20 \pm 1°C.

“Testing Pre-Saturated or Impregnated Towelettes for Hard Surface Disinfection Supplemental-*Klebsiella pneumoniae*”

Microbiotest. December 14, 2010. Lab # 198-612

Conclusion: CaviWipes/CaviWipes XL passed the “Testing Pre-Saturated or Impregnated Towelettes for Hard Surface Disinfection – Supplemental” test when *Klebsiella pneumoniae*, containing a 5% organic load, was exposed to the test agent for three minutes at 20 \pm 1°C.

“Testing Pre-Saturated or Impregnated Towelettes for Hard Surface Disinfection Supplemental-*Bordetella pertussis*”

Microbiotest. December 30, 2010. Lab # 198-613

Conclusion: CaviWipes/CaviWipes XL passed the “Testing Pre-Saturated or Impregnated Towelettes for Hard Surface Disinfection – Supplemental” test when *Bordetella pertussis*, containing a 5% organic load, was exposed to the test agent for three minutes at 20 \pm 1°C.

“Testing Pre-Saturated or Impregnated Towelettes for Hard Surface Disinfection Supplemental-Extended Spectrum β -lactamase *Escherichia coli* (ESBL)”

Microbiotest. November 30, 2010. Lab # 198-614

Conclusion: CaviWipes/CaviWipes XL passed the “Testing Pre-Saturated or Impregnated Towelettes for Hard Surface Disinfection – Supplemental” test when Extended Spectrum β -lactamase *Escherichia coli*, containing a 5% organic load, was exposed to the test agent for three minutes at 20 \pm 1°C.

The following study was performed on CaviCide. CaviWipes are non-woven disposable towelettes pre-saturated with CaviCide. This study has been bridged to support the CaviWipes product claim.

“CaviCide versus Methicillin Resistant *Staphylococcus aureus* (MRSA) in the AOAC Germicidal Spray Products Test”

MicroChem Laboratory. April 19, 1995. Lab ID# 950406-1.

Conclusion: Two lots of CaviCide diluted to the minimum manufacturing concentrations of Isopropanol and Hyamine 1622 passed the AOAC Germicidal Spray Products Test against MRSA at 20±1°C.

The following study was performed on CaviCide. CaviWipes are non-woven disposable towelettes pre-saturated with CaviCide. This study has been bridged to support the CaviWipes product claim.

“CaviCide versus Vancomycin Resistant *Enterococcus faecalis* (VRE) in the AOAC Germicidal Spray Products Test”

MicroChem Laboratory. April 19, 1995. Lab ID# 950406-1.

Conclusion: Two lots of CaviCide diluted to the minimum manufacturing concentrations of Isopropanol and Hyamine 1622 passed the AOAC Germicidal Spray Products Test against VRE at 20±1°C.

Fungicidal/Yeast Efficacy Studies

Trichophyton mentagrophytes

Candida albicans

The following study was performed on CaviCide. CaviWipes are non-woven disposable towelettes pre-saturated with CaviCide. This study has been bridged to support the CaviWipes product claim.

“Fungicidal Activity of CaviCide in a Stainless Steel Cylinder Use-Dilution Test and in Suspension”

MicroChem Laboratory. January 24, 1994. Lab ID# 931230-1; 940104-1; 940106-1; 940110-2; 940112-4; 940114-2.

Conclusion: CaviCide killed *Trichophyton mentagrophytes* in suspension at 20±1°C. CaviCide also killed these fungi on stainless steel surfaces at 20±1°C.

“Testing Pre-Saturated or Impregnated Towelettes for Hard Surface Disinfection- *Candida albicans*”

MicroBiotest, Inc. December 23, 2010. Lab ID # 198-617.

Conclusion: When tested as described, CaviWipes passed when *Candida albicans*, containing at least 5% organic load was exposed to the test agent for three minutes at 21°C.

Virucidal Efficacy Studies:

Herpes Simplex Virus Type 1
Herpes Simplex Virus Type 2
Human Immunodeficiency Virus (HIV-1)
Hepatitis C Virus (HCV)
Coronavirus
Influenza A2 Virus

The following study was performed on CaviCide. CaviWipes are non-woven disposable towelettes pre-saturated with CaviCide. This study has been bridged to support the CaviWipes product claim.

“CaviCide v. Herpes Simplex Virus Type 1” (Liquid)
Gibraltar Biological Laboratories, Inc. July 31, 1984. Lab ID# 279-161-1056.
Conclusion: CaviCide inactivated Herpes Simplex Virus Type 1.

The following study was performed on CaviCide. CaviWipes are non-woven disposable towelettes pre-saturated with CaviCide. This study has been bridged to support the CaviWipes product claim.

“CaviCide v. Herpes Simplex Virus Type 2” (Liquid)
Gibraltar Biological Laboratories, Inc. July 31, 1984. Lab ID# 276-161-1044.
Conclusion: CaviCide inactivated Herpes Simplex Virus Type 2.

The following study was performed on CaviCide. CaviWipes are non-woven disposable towelettes pre-saturated with CaviCide. This study has been bridged to support the CaviWipes product claim.

“Virucidal Efficacy of CaviCide Against the Human Immunodeficiency Virus (HIV-1)”
Southern Research Institute. July 14, 1992. Lab ID# 0051.
Conclusion: CaviCide demonstrated virucidal activity against HIV-1 in a CPE assay with MT-2 cells.

The following study was performed on CaviCide. CaviWipes are non-woven disposable towelettes pre-saturated with CaviCide. This study has been bridged to support the CaviWipes product claim.

“Virucidal Effectiveness Test Using Bovine viral diarrhea virus (BVDV)-Surrogate for human Hepatitis C Virus”
MicroBiotest, Inc. April 14, 2003. Laboratory ID# 198-282.
When tested as described, CaviCide passed the Virucidal Effectiveness Test when BVDV, containing at least 5% organic load, was exposed to the test material at 20±2°C.

The following study was performed on CaviCide. CaviWipes are non-woven disposable towelettes pre-saturated with CaviCide. This study has been bridged to support the CaviWipes product claim.

“Confirmatory Virucidal Effectiveness Test Using Bovine viral diarrhea virus (BVDV)-Surrogate for human Hepatitis C Virus”

MicroBiotest, Inc. April 17, 2003. Laboratory ID# 198-283.

When tested as described, CaviCide passed the Confirmatory Virucidal Effectiveness Test when BVDV, containing at least 5% organic load, was exposed to the test agent at 20±2°C.

The following study was performed on CaviCide. CaviWipes are non-woven disposable towelettes pre-saturated with CaviCide. This study has been bridged to support the CaviWipes product claim.

“Virucidal Effectiveness Test using Bovine Viral Diarrhea Virus (BVDV) – Cell Associated”

MicroBiotest, Inc. May 18, 2001. Laboratory ID# 198-248.

When tested as described, CaviCide passed the Virucidal Effectiveness Test when BVDV (surrogate for human Hepatitis C Virus)-cell associated, containing 50% whole blood as soil load, was exposed to the test material at 20±2°C.

The following study was performed on CaviCide. CaviWipes are non-woven disposable towelettes pre-saturated with CaviCide. This study has been bridged to support the CaviWipes product claim.

“Virucidal Effectiveness Test – Coronavirus”

MicroBiotest, Inc. October 15, 2003. Laboratory ID# 198-287.

When tested as described, CaviCide passed the Virucidal Effectiveness Test when Human Coronavirus, containing at least 5% organic load, was exposed to the test agent at 20±2°C.

The following toxicity studies were performed on CaviCide. CaviWipes are non-woven disposable towelettes pre-saturated with CaviCide. These toxicity studies have been bridged to support the CaviWipes product claim.

Toxicity Studies

Oral Toxicity

Inhalation Toxicity

Dermal Toxicity/Irritation/Sensitization

Ocular Irritation

“Acute Oral Toxicity Study of CaviCide in Sprague-Dawley Rats”

American Standards Biosciences Corporation. May 23, 1986. Lab ID# 86-367.

CaviCide was tested for potential acute oral toxicity in accordance with the procedure outlined in the Pesticide Assessment Guidelines. No signs of toxicity were exhibited at any time during the 14-day observation period of this study. Based on the results obtained in this study, the acute oral toxicity LD₅₀ of CaviCide is greater than 5gm/kg of body weight.

“Acute Inhalation Toxicity Limit Test: CaviCide”

Product Safety Labs. May 20, 1996. Lab ID# 4244.

“An Acute Inhalation Toxicity Test was conducted with rats to determine the potential for CaviCide to produce toxicity via the inhalation route at an exposure level of 2.0 mg/L. Based on the results of this study, the single exposure Acute Inhalation LC₅₀ of the test substance is greater than 2.08 mg/L.

“Acute Dermal Toxicity Study of CaviCide on New Zealand Albino Rabbits”

American Standards Biosciences Corporation. June 6, 1986. Lab ID# 86-368.

CaviCide was tested to evaluate the potential dermal toxicity on New Zealand Rabbits. The animals did not exhibit any signs of toxicity during the 14-day observation period. Skin reactions did not reveal any erythema, eschar or edema. Based on the results obtained in this study, the LD₅₀ is greater than 2.0 gm/kg of body weight.

“Primary Dermal Irritation in Rabbits: CaviCide”

American Standards Biosciences Corporation. September 18, 1986. Lab ID# 86-591.

CaviCide was tested for potential dermal irritation in accordance with the procedure outlined in the Pesticide Assessment Guidelines. CaviCide exhibited no erythema, no edema and no eschar at 1, 24, 48 and 72 hour intervals during the observation period. Based on the results obtained in this study, CaviCide is not considered an irritant.

“Dermal Sensitization Test: CaviCide”

Product Safety Labs. May 20, 1996. Lab ID# 4243.

“A dermal sensitization test was conducted with guinea pigs to determine the potential for CaviCide to produce sensitization after repeated topical applications. Based on the results of this study, CaviCide is not considered to be a contact sensitizer.

“Primary Eye Mucosa Irritation in Rabbits: CaviCide”

American Standards Biosciences Corporation. September 25, 1986. Lab ID# 86-590.

New Zealand Albino Rabbits weighing between 2.0-3.0 kg were employed to evaluate the potential irritant effects of CaviCide on the eye mucosa. Based on the criteria outlined in “Grades for Ocular Lesions: Pesticide Assessment Guidelines”, CaviCide exhibited positive effects that were reversible.

Stability Studies

“CaviWipes Product Chemistry and Storage Stability Data”

Metrex Research Corporation. June 11, 1999. Lab ID# M2001.

Conclusion: All parameters were found to be within specification at 11.1 months at 40°C. The data justifies expiration dating of 2 years.