



Micro-Kill® One

Germicidal Alcohol Wipes technical data bulletin

EPA Reg. No. 88494-2-37549

Product Description

Medline Micro-Kill® One Germicidal Alcohol Wipes is a durable, low lint polypropylene cloth that features a quaternary ammonium and alcohol solution to kill 25 microorganisms, including gram positive, gram negative and multi-drug resistant bacteria; encapsulated bacteria; mycobacteria; enveloped and non-enveloped, large and small viruses; and fungi; within a 1 minute contact time. The disinfecting wipe is for use on hard, non-porous surfaces only, including medical, dental and laboratory countertops, exam tables, carts, patient care equipment, point-of-care equipment, telephones, sink tops, toilet seats, glazed porcelain, stainless steel, Formica, vinyl, rubber and most plastic surfaces.

Chemical composition

Active ingredients	Percentage
Ethyl alcohol	72.50%
Didecyl dimethyl ammonium chloride	0.33%
Other ingredients	27.17%
Total	100.00%

Efficacy

Bacterial organism efficacy

Mycobacteria

Organism	<i>Mycobacterium bovis</i> (ATCC 35743)
Test method used	Modified AOAC 18 th Edition Tuberculocidal Test (germicidal spray test) on pre-saturated or impregnated towelettes [based on AOAC Official Method 961.02 Germicidal Spray Products as Disinfectants]
Organic soil load	5% bovine serum
Exposure time	1 minute at room temperature
Incubation	60 days at 37±1°C
Results	When tested undiluted [RTU] and in the presence of 5% organic load did pass in a one minute contact time against <i>Mycobacterium bovis</i> . (December 24, 2012).

Encapsulated bacteria

Organism	<i>Klebsiella pneumonia</i> (ATCC 4352)
Test method used	AOAC 18 th Edition Supplemental Claim Efficacy Germicidal Spray Test, confirmed by Modified AOAC Hospital Claim Germicidal Spray Test on Pre-Saturated or Impregnated Towelettes
Organic soil load	5% bovine serum
Exposure time	1 minute at room temperature
Incubation	48 hours at 36±1°C
Results	When tested undiluted [RTU] and in the presence of 5% organic load did pass in a one minute contact time against <i>Klebsiella pneumoniae</i> . (October 17, 2011); confirmed on towelettes (November 26, 2012).

Gram positive bacteria

Organisms	<i>Staphylococcus aureus</i> (ATCC 6538) <i>Streptococcus pyogenes</i> (ATCC 19615) <i>Listeria monocytogenes</i> (ATCC 984)
Test method used	AOAC 18 th Edition Hospital Claim Germicidal Spray Test, and AOAC 18 th Edition Supplemental Claim Efficacy Germicidal Spray Test, confirmed by Modified AOAC Hospital Claim Germicidal Spray Test on Pre-Saturated or Impregnated Towelettes
Organic soil load	5% bovine serum
Exposure time	1 minute at room temperature
Incubation	48 hours at 36±1°C
Results	When tested undiluted [RTU] and in the presence of 5% organic load did pass in one minute contact time against <i>Staphylococcus aureus</i> (October 6, 2011), <i>Streptococcus pyogenes</i> (November 23, 2011), <i>Listeria monocytogenes</i> (November 23, 2011); all tests confirmed on towelettes (November 26, 2012).



Viral organism efficacy

Bloodborne pathogens

Organisms	Human Hepatitis B Virus (Duck Hepatitis B Virus tested as surrogate) Human Hepatitis C Virus (Bovine Diarrhea Virus tested as surrogate) HIV 1 (AIDS Virus)
Test method used	Modified AOAC 18 th Edition Germicidal Spray Test (including both Initial and Confirmatory for Hepatitis B and C), confirmed by Pre-Saturated or Impregnated Towelettes Virucidal Effectiveness Test
Organic soil load	>5% combination of natural organic matter and FBS (for Hepatitis B), 10% Horse Serum (for Hepatitis C), 10% FBS (for HIV-1 and towelette confirmatory)
Exposure time	1 minute at room temperature
Results	When tested undiluted [RTU] and in the presence of organic load did pass in one minute contact time against Hepatitis B (March 13, 2012), Hepatitis C (March 12, 2012), HIV-1 (December 20, 2011); all tests confirmed on towelettes (November 29, 2012).

Enveloped viruses

Organisms	Human Coronavirus (VR-1558) Herpes Simplex (VR-539) Influenza A (VR-544) Respiratory Syncytial Virus (VR-26)
Test method used	Modified AOAC 18 th Edition Germicidal Spray Test, confirmed by Pre-Saturated or Impregnated Towelettes Virucidal Effectiveness Test
Organic soil load	5% FBS, 10% FBS (for towelette confirmatory)
Exposure time	1 minute at room temperature
Results	When tested undiluted [RTU] and in the presence of organic load did pass in one minute contact time against Corona Virus (December 20, 2011), Herpes Simplex (December 7, 2011), Influenza A (December 20, 2011), Respiratory Syncytial Virus (December 7, 2011); all tests confirmed on towelettes (November 29, 2012).

Large non-enveloped viruses

Organism	Rotavirus
Test method used	Modified AOAC 18 th Edition Germicidal Spray Test, confirmed by Pre-Saturated or Impregnated Towelettes Virucidal Effectiveness Test
Organic soil load	5% FBS, 10% FBS (for towelette confirmatory)
Exposure time	1 minute at room temperature
Results	When tested undiluted [RTU] and in the presence of organic load did pass in one minute contact time against Rotavirus (December 21, 2011); confirmed on towelettes (November 29, 2012).

Gram negative bacteria

Organisms	<i>Pseudomonas aeruginosa</i> (ATCC 15442) <i>Salmonella enterica</i> (ATCC 10808) <i>Acinetobacter baumannii</i> (ATCC 19606) <i>Burkholderia cepacia</i> (ATCC 25416) <i>Campylobacter jejuni</i> (ATCC 29428) <i>Escherichia coli</i> (ATCC 35150)
Test method used	AOAC 18 th Edition Hospital Claim Germicidal Spray Test, and AOAC 18 th Edition Supplemental Claim Efficacy Germicidal Spray Test, confirmed by Modified AOAC Hospital Claim Germicidal Spray Test on Pre-Saturated or Impregnated Towelettes
Organic soil load	5% bovine serum
Exposure time	1 minute at room temperature
Incubation	48 hours at 36±1°C
Results	When tested undiluted [RTU] and in the presence of 5% organic load did pass in one minute contact time against <i>Pseudomonas aeruginosa</i> and <i>Salmonella enterica</i> (October 6, 2011), <i>Acinetobacter baumannii</i> (December 20, 2011), <i>Burkholderia cepacia</i> (December 20, 2011), <i>Campylobacter jejuni</i> (January 9, 2012), <i>Escherichia coli</i> (November 23, 2011); all tests confirmed on towelettes (November 26, 2012).

Multi-drug resistant bacteria

Organisms	<i>Methicillin Resistant Staphylococcus aureus</i> (MRSA) (ATCC 33591) <i>Vancomycin Resistant Enterococcus faecium</i> (VRE) (ATCC 51559)
Test method used	AOAC 18 th Edition Supplemental Claim Efficacy Germicidal Spray Test, confirmed by Modified AOAC Hospital Claim Germicidal Spray Test on Pre-Saturated or Impregnated Towelettes
Organic soil load	5% bovine serum
Exposure time	1 minute at room temperature
Incubation	48 hours at 36±1°C
Results	When tested undiluted [RTU] and in the presence of 5% organic load did pass in one minute contact time against <i>Methicillin Resistant Staphylococcus aureus</i> (MRSA) (November 14, 2011), <i>Vancomycin Resistant Enterococcus faecium</i> (VRE) (November 23, 2011); all tests confirmed on towelettes (November 26, 2012).

Small non-enveloped viruses

Organism	Norovirus (Feline Calicivirus tested as surrogate) Poliovirus (VR-1562) Rhinovirus (VR-340)
Test method used	Modified AOAC 18 th Edition Germicidal Spray Test (including both initial and confirmatory for Norovirus), confirmed by Pre-Saturated or Impregnated Towelettes Virucidal Effectiveness Test
Organic soil load	5% FBS, 10% FBS (for towelette confirmatory)
Exposure time	1 minute at room temperature
Results	When tested undiluted [RTU] and in the presence of organic load did pass in one minute contact time against Norovirus (March 12, 2012), Poliovirus (October 3, 2011), Rhinovirus (December 20, 2011); all tests confirmed on towelettes (November 29, 2012).

Fungal organism efficacy

Organisms	<i>Trichophyton mentagrophytes</i> (ATCC 9533) (Athlete's foot fungus)
Test method used	Modified AOAC Fungicidal-Germicidal Spray Test on Pre-Saturated or Impregnated Towelettes
Organic soil load	5% bovine serum
Exposure time	1 minute at room temperature
Results	When tested undiluted [RTU] and in the presence of organic load did pass in one minute contact time against <i>Trichophyton mentagrophytes</i> .

Toxicity

Acute oral toxicity study of Medline Micro-Kill One Germicidal Alcohol Wipes

Conclusion: An initial limit dose of 5,000 mg/kg (test formula liquid) was administered to one healthy female rat by oral gavage. Due to the absence of mortality in this animal, two additional females received the same dose level, simultaneously. Since these animals survived, no additional animals were tested. Under the conditions of this study, the acute oral LD50 of the test formula is greater than 5,000 milligrams per kilogram of body weight in female rats.

Primary eye irritation study of Medline Micro-Kill One Germicidal Alcohol Wipes

Conclusion: A primary eye irritation test was conducted with three healthy rabbits to determine the potential for the test formula liquid to produce irritation from a single instillation via the ocular route over a course of seven days. Under the conditions of this study, the test substance is classified as moderately irritating to the eye.

Acute dermal toxicity study of Medline Micro-Kill One Germicidal Alcohol Wipes

Conclusion: An acute dermal toxicity test was conducted with ten rats (five male and five female) to determine the potential for the test formula liquid to produce toxicity from a single topical application. Under the conditions of this study the single dose acute dermal LD50 of the test substance is greater than 5,000 mg/kg of body weight in male and female rats.

Primary dermal irritation study of Medline Micro-Kill One Germicidal Alcohol Wipes

Conclusion: A primary skin irritation test was conducted with three rabbits to determine the potential for the test formula liquid to produce irritation after a single topical application. Five-tenths of a milliliter of the test substance was applied to the skin of the rabbits for four hours. Observations were made over a period of seven days. Under the conditions of this study, the test substance is classified as slightly irritating to the skin.

Dermal sensitization test study of Medline Micro-Kill One Germicidal Alcohol Wipes

Conclusion: A Local Lymph Node Assay (LLNA) test was conducted with 35 mice to determine the dermal sensitization of the test formula liquid, over a period of 16 days. Based on the results of this study, the test substance is not considered to be a contact dermal sensitizer.

Acute inhalation toxicity study of Medline Micro-Kill One Germicidal Alcohol Wipes

Conclusion: An acute inhalation toxicity test was conducted with 20 rats (15 female and five male) to determine the potential for the test formula liquid to produce toxicity via the inhalation (nose-only exposure) route. Exposure levels of 2.0 mg/L, 0.5 mg/L and 0.05 mg/L, were chosen for this test. Under the conditions of this study, the acute inhalation LC50 of the test substance is greater than 2.11 mg/L for male rats and the defined LC50 of the test substance is 2.16 mg/L for female rats.