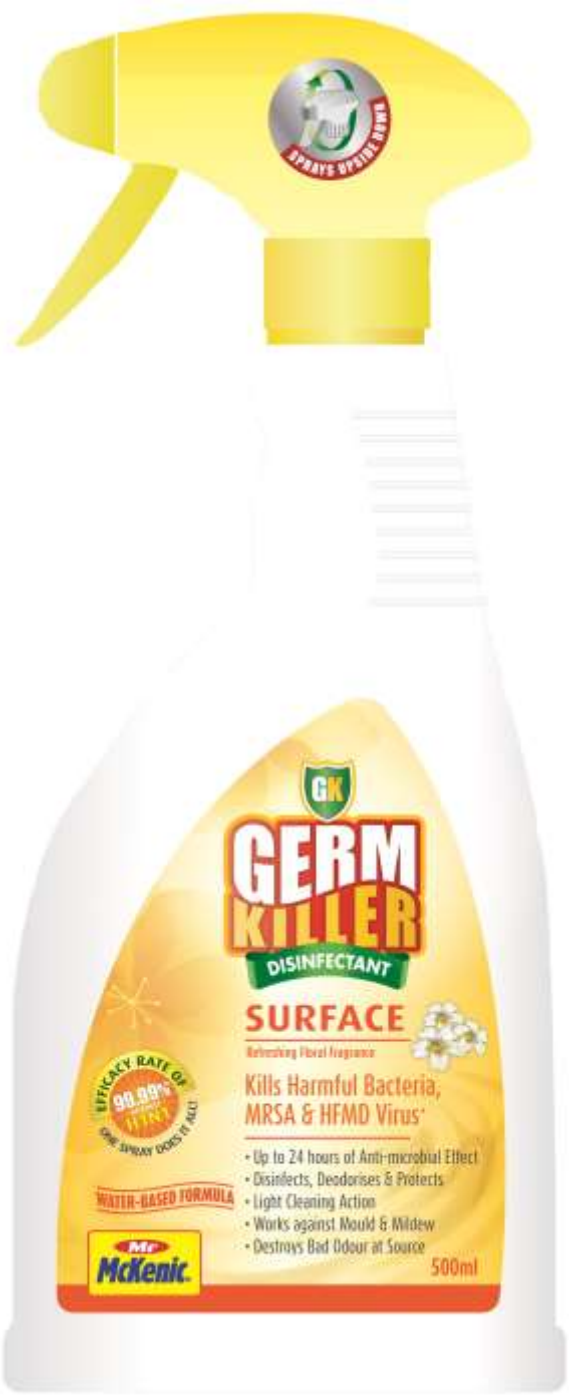

GK Surface™

Product description:

GK Surface™ is a premium water-based disinfectant with a broad spectrum virucidal and bactericidal action, that **kills 99.9999% of bacteria**. With a multi-action formula, it cleans and disinfects all surfaces and can also be used on fabrics. GK Surface™ is convenient and ready-to-use, with no dilution needed.

Product features:

- ✓ Up to 24 hours anti-microbial effect
- ✓ Disinfects, deodorises and protects
- ✓ Light cleaning action
- ✓ Works against mould and mildew
- ✓ Destroys bad odour at source
- ✓ Safe for daily use on multiple surfaces, including fabrics
- ✓ Refreshing floral fragrance

Effective against:

Gram-negative bacteria (P. Aeruginosa)
Gram-positive bacteria (Staph. Aureus)
MRSA
HFMD
H1N1 Influenza A
Human coronavirus
Mould & mildew

Application for use:

Available sizes:


500ml


85ml

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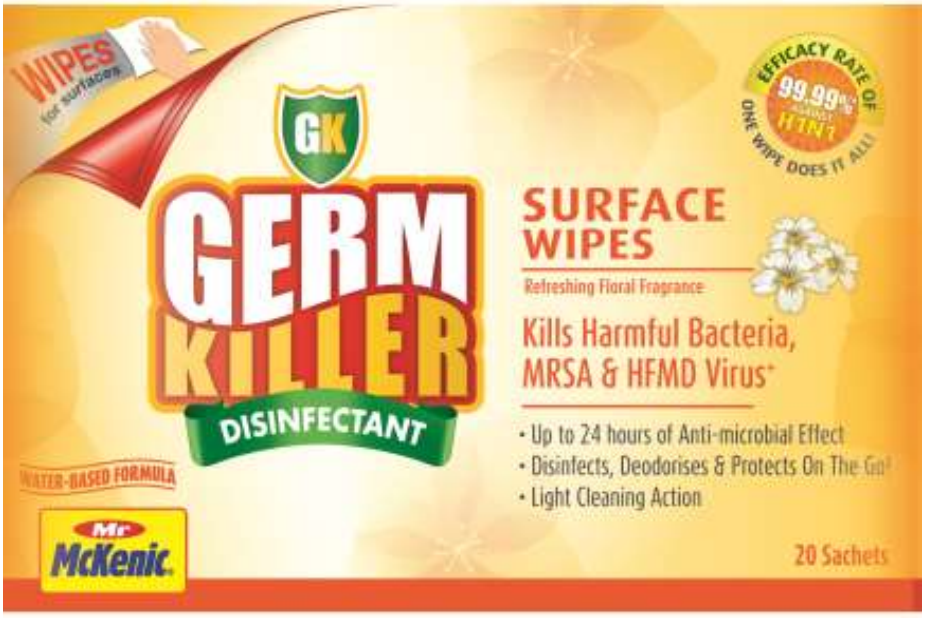
www.gk-germkiller.com



Available sizes:

20pc/pack

GK Surface™ Wipes

Product description:

The GK Surface™ Wipes are made with a multi-action formula that has a broad spectrum bactericidal and virucidal action, **killing 99.9999% of bacteria**. Individually packed for ultimate hygiene and freshness, they are convenient to bring along and ready-to-use. The GK Surface™ Wipes contain no harsh chemicals, and are safe for daily use to clean all hard and non-porous environmental surfaces anytime, anywhere.

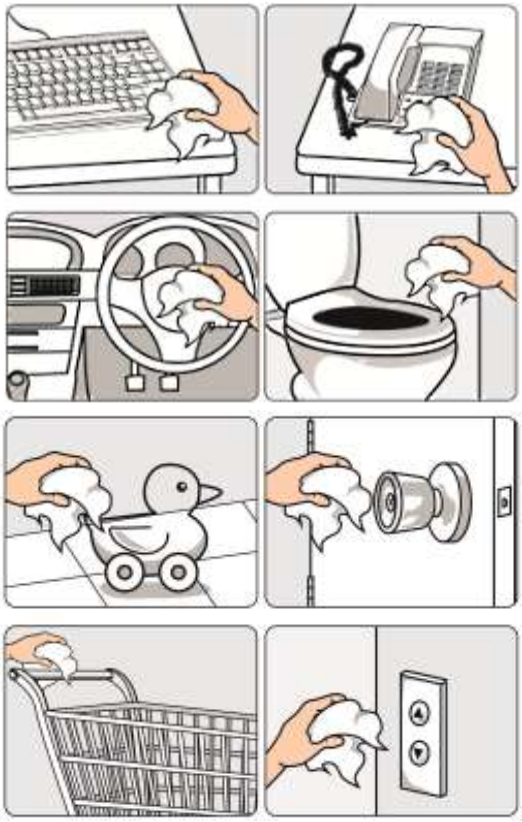
Product features:

- ✓ Disinfects, deodorises and protects on the go
- ✓ Light cleaning action
- ✓ Up to 24 hours anti-microbial effect
- ✓ Refreshing floral fragrance
- ✓ Individually wrapped for ultimate freshness

Effective against:

Gram-negative bacteria (P. Aeruginosa)
Gram-positive bacteria (Staph. Aureus)
MRSA
HFMD
H1N1 Influenza A
Human coronavirus
Mould & mildew

Application for use:



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ATS LABS

FINAL STUDY REPORT

STUDY TITLE

Evaluation of Antiviral Properties of a Product
Using a Virucidal Suspension Assay

Virus: Coxsackievirus type A16

PRODUCT IDENTITY

The Germ Killer
Lot BN100296 and Lot BNL100001

AUTHOR

Shanen Conway, B.S.
Study Director

STUDY COMPLETION DATE

March 2, 2011

PERFORMING LABORATORY

ATS Labs
1285 Corporate Center Drive, Suite 110
Eagan, MN 55121

SPONSOR

Vance Chemicals Pte. Ltd.
No. 24 Gul Lane
Singapore 629418

PROJECT NUMBER

A10971

STUDY REPORT

GENERAL STUDY INFORMATION

Study Title: Evaluation of Antiviral Properties of a Product Using a Virucidal Suspension Assay

Project Number: A10971

Protocol Number: VBS01020711.COX

Sponsor: Vance Chemicals Pte. Ltd.
No. 24 Gul Lane
Singapore 629418

Testing Facility: ATS Labs
1285 Corporate Center Drive, Suite 110
Eagan, MN 55121

TEST SUBSTANCE IDENTITY

Test Substance: The Germ Killer

Lot/Batch(s): BN100296 and BNL100001

Test Substance Characterization
Test substance characterization as to content, stability, solubility, storage, etc., (21 CFR, Part 58, Subpart F [58.105]) is the responsibility of the Sponsor.

STUDY DATES

Date Sample Received: July 14, 2010 (Lot BN100296) July 15, 2010 (Lot BNL100001)
Study Initiation Date: February 15, 2011
Experimental Start Date: February 16, 2011
Experimental End Date: February 23, 2011
Study Completion Date: March 2, 2011

OBJECTIVE

The objective of this study was to evaluate the antiviral properties of a product against Coxsackievirus type A16 when exposed (in suspension) for a specified exposure period(s). The protocol is a modification of the Standard Test Method for Efficacy of Antimicrobial Agents Against Viruses in Suspension (ASTM E 1052).

SUMMARY OF RESULTS

Test Substance:	The Germ Killer, Lot BN100296 and Lot BNL100001
Dilution Tested:	Ready to use (RTU)
Virus:	Coxsackievirus type A16, Strain G10, ATCC VR-174
Exposure Time:	5 minutes
Exposure Temperature:	Room temperature (20.0°C)
Organic Soil Load:	1% fetal bovine serum
Efficacy Result:	Under these test conditions, The Germ Killer (BN100296) demonstrated a 90% reduction in the stock virus titer as compared to the titer of the corresponding virus control. The Germ Killer (BNL100001) demonstrated a 98.2% reduction in the stock virus titer as compared to the titer of the corresponding virus control. The log reductions in viral titer were 1.0 $\log_{10}$ and 1.75 $\log_{10}$, respectively.

TEST SYSTEM

1. Virus

The G10 strain of Coxsackievirus type A16 used for this study was obtained from the American Type Culture Collection, Manassas, VA (ATCC VR-174). Stock virus was prepared by collecting the supernatant culture fluid from 75-100% infected culture cells. The cells were disrupted and cell debris removed by centrifugation at approximately 2000 RPM for five minutes at approximately 4°C. The supernatant was removed, aliquoted, and the high titer stock virus was stored at ≤-70°C until the day of use. On the day of use an aliquot of stock virus (ATS Labs Lot CX16-36) was removed, thawed and maintained at a refrigerated temperature until used in the assay. The stock virus culture was adjusted to contain 1% fetal bovine serum as the organic soil load. The stock virus tested demonstrated cytopathic effects (CPE) typical of Coxsackievirus on LLC-MK_2 (Rhesus monkey kidney) cells.

2. Indicator Cell Cultures

LLC-MK_2 (Rhesus monkey kidney) cells were originally obtained from the American Type Culture Collection, Manassas, VA (ATCC CCL-7.1). The cells were propagated by ATS Labs personnel. The cells were seeded into multiwell cell culture plates and maintained at 36-38°C in a humidified atmosphere of 5-7% CO_2. On the day of testing, cells were observed as having proper cell integrity and confluency, and therefore, were acceptable for use in this study.On the day of testing, cells were observed as having proper cell integrity and confluency and therefore, were acceptable for use in this study.

All cell culture documentation was retained for the cell cultures used in the assay with respect to source, passage number, growth characteristics, seeding densities and the general condition of the cells.

STUDY RESULTS

Cytotoxicity and Neutralization Controls
Test substance cytotoxicity was observed at 3.5 $\log_{10}$. The neutralization control demonstrated that the test substance was neutralized at $\leq$3.5 $\log_{10}$.

5 Minute Exposure Time
The titer of the virus control was 5.5 $\log_{10}$. Following exposure, test virus infectivity was detected in the virus-test substance mixture at 4.5 $\log_{10}$ for Lot BN100296 and 3.75 $\log_{10}$ for Lot BNL100001. Lot BN100296 demonstrated a log reduction of 1.0 $\log_{10}$. Lot BNL100001 demonstrated a log reduction of 1.75 $\log_{10}$.

STUDY CONCLUSION

Under the conditions of this investigation, in the presence of a 1% fetal bovine serum organic soil load, The Germ Killer (Lot BN100296), ready to use, demonstrated a 90.0% reduction in viral titer following a 5 minute exposure time to Coxsackievirus type A16 as compared to the titer of the corresponding virus control. Lot BN100296 demonstrated a log reduction of 1.0 $\log_{10}$.

Under the conditions of this investigation, in the presence of a 1% fetal bovine serum organic soil load, The Germ Killer (Lot BNL100001), ready to use, demonstrated a 98.2% reduction in viral titer following a 5 minute exposure time to Coxsackievirus type A16 as compared to the titer of the corresponding virus control. Lot BNL100001 demonstrated a log reduction of 1.75 $\log_{10}$.

In the opinion of the Study Director, there were no circumstances that may have adversely affected the quality or integrity of the data.

Microbac®
LABORATORY SERVICES

MicroBioTest
A Division of Microbac Laboratories, Inc.
105 Carpenter Drive
Sterling, VA 20164

Volume _____

AMENDED FINAL REPORT

(Replaces Final Report Issued 06/19/13)
(See Study Dates and Facilities section for details)

VIRUCIDAL HARD-SURFACE EFFICACY TEST- Human Coronavirus

Test Agent
GK-GermKiller® Surface™

Test Organism
Human Coronavirus, Strain 229E, ATCC VR-740

Test Guideline
EPA Guidelines 810.2200 (f) 3

Author
S. Steve Zhou, Ph.D.

Study Completion Date
06/13/2013

Performing Laboratory
MicroBioTest
A Division of Microbac Laboratories, Inc.
105 Carpenter Drive
Sterling, Virginia 20164

Laboratory Project Identification Number
838-101

Protocol Identification Number
VAN.1a.05.16.13

Sponsor
Vance Chemicals Pte. Ltd.
24 Gul Lane
Singapore, 629418
Republic of Singapore

703.925.0100 (phone) • www.microbiotest.com • 703.925.9366 (fax)
www.microbac.com

TEST SUMMARY

TITLE: Virucidal Hard-surface Efficacy Test - Human Coronavirus

STUDY DESIGN: This study was performed according to the signed protocol and project sheet(s) issued by the Study Director (See Appendix). Raw data included with appendix.

TEST AGENT(S) SUPPLIED BY THE SPONSOR OF THE STUDY:

1. GK-GermKiller® Surface™; Batch No. 1: BN130069, received at MicroBioTest 05/30/13, and assigned DS No. D318

2. GK-GermKiller® Surface™; Batch No. 2: BN130160, received at MicroBioTest 05/30/13, and assigned DS No. D319

SPONSOR: **Vance Chemicals Pte. Ltd.**
24 Gul Lane
Singapore, 629418
Republic of Singapore

MicroBioTest
A Division of Microbac Laboratories, Inc.
105 Carpenter Drive
Sterling, VA 20164

CONCLUSIONS

According to the regulatory agencies, the test agent passes the Virucidal Hard-surface Efficacy Test if there is complete inactivation of the challenge virus at all dilutions. When cytotoxicity is evident, at least a three-$\log_{10}$ reduction in titer must be demonstrated beyond the cytotoxic level.

When tested as described, GK- GermKiller® Surface™ passed the Virucidal Hard-surface Efficacy Test when Human Coronavirus, containing at least 5% organic soil, was exposed to the test agent for 3 minutes at 21°C. Test agent achieved log reduction of 99.9%. All of the controls met the criteria for a valid test. These conclusions are based on observed data.

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105 Carpenter Drive
Sterling, VA 20164

STUDY REPORT

GENERAL STUDY INFORMATION

Study Title: Virucidal Efficacy of a Disinfectant for Use on Inanimate Environmental Surfaces

Project Number: A09902

Protocol Number: VBS01070110.FLUA

Sponsor: Vance Chemicals Pte. Ltd.
No. 24 Gul Lane
Singapore 629418

Testing Facility: ATS Labs
1285 Corporate Center Drive, Suite 110
Eagan, MN 55121

TEST SUBSTANCE IDENTITY

Test Substance Name: The Germ Killer

Lot/Batch(s): Lot BN100296 and Lot BNL100001

Test Substance Characterization
Test substance characterization as to content, stability, solubility, storage, etc., (40 CFR, Part 160, Subpart F [160.105]) is the responsibility of the Sponsor.

STUDY DATES

Date Sample Received: July 14, 2010 (Lot BN100296) July 15, 2010 (Lot BNL100001)
Study Initiation Date: July 27, 2010
Experimental Start Date: August 4, 2010
Experimental End Date: August 11, 2010
Study Completion Date: August 25, 2010

OBJECTIVE

The objective of this study was to evaluate the virucidal efficacy of a test substance against 2009-H1N1 Influenza A virus (Novel H1N1) according to test criteria and methods approved by the United States Environmental Protection Agency (U.S. EPA) for registration of a product as a virucide.

SUMMARY OF RESULTS

Test Substance:	The Germ Killer, Lot BN100296 and Lot BNL100001
Dilution:	Ready to use (RTU), pump spray
Virus:	2009-H1N1 Influenza A virus (Novel H1N1) Strain A/Mexico/4108/2009 CDC #2009712192
Exposure Time:	Five minutes
Exposure Temperature:	25-28°C (26.0°C)
Organic Soil Load:	1% fetal bovine serum
Efficacy Result:	Two lots of The Germ Killer met the test criteria specified in the study protocol. The results indicate **complete inactivation** of 2009-H1N1 Influenza A virus (Novel H1N1) under these test conditions as required by the U.S. EPA for claims of virucidal activity.

STUDY RESULTS

Results of tests with two lots of The Germ Killer (Lot BN100296 and Lot BNL100001), ready to use as a pump spray, exposed to 2009-H1N1 Influenza A virus (Novel H1N1) in the presence of a 1% fetal bovine serum organic soil load at 26.0°C for five minutes are shown in Tables 1-3. All cell controls were negative for test virus infectivity. The titer of the input virus control was 5.5 $\log_{10}$. The titer of the dried virus control was 5.5 $\log_{10}$. Following exposure, test virus infectivity was not detected in the virus-test substance mixture for either lot at any dilution tested ($\leq$1.5 $\log_{10}$). Test substance cytotoxicity was observed in both lots at 1.5 $\log_{10}$. The neutralization control (non-virucidal level of the test substance) indicates that the test substance was neutralized at $\leq$1.5 $\log_{10}$ for both lots. Taking the cytotoxicity and neutralization control results into consideration, the reduction in viral titer was $\geq$4.0 $\log_{10}$ for both lots.

STUDY CONCLUSION

Under the conditions of this investigation and in the presence of a 1% fetal bovine serum organic soil load, The Germ Killer (Lot BN100296 and Lot BNL100001), ready to use as a pump spray, demonstrated complete inactivation of 2009-H1N1 Influenza A virus (Novel H1N1) following a five minute exposure time at 26.0°C as required by the U.S. EPA for virucidal label claims.

In the opinion of the Study Director, there were no circumstances that may have adversely affected the quality or integrity of the data.

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Product Name/Identifier	GK Surface , GK Surface Wipes
Product Code	DG8312
Product Use	Disinfecting surface spray to eliminate a broad range of viruses, germs and bacteria.
Company Information	Vance Chemicals Pte Ltd No.24 Gul Lane Singapore 629418 +65 6863 0863 msds@mr-mckenic.com
Emergency Contact	+65 9299 8024

SECTION 2 HAZARDS INDENTIFICATION

GHS CLASSIFICATION

Health		Environmental	Physical
Eye irritation	Category 2	Not Classified	Not Classified

GHS LABEL:

SIGNAL WORD:
Warning

Hazard statements:
H320 Causes eye irritation

Prevention precautionary statements:
P264 Wash thoroughly after handling

Response precautionary statements:

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337+P313	If eye irritation persists: Get medical advice/attention.

Safety Data Sheet

SECTION 3 COMPOSITIONS / INFORMATION ON INGREDIENTS

Chemical Identity	CAS #	EINECS #	Weight %
Quaternary ammonium compounds, di-C8-10-alkyldimethyl, chlorides	68424-95-3	270-331-5	<0.5
Benzethonium chloride	121-54-0	204-479-9	<0.5
Isopropyl alcohol	67-63-0	200-661-7	<10
Non-hazardous materials	Mixture	-	>80

SECTION 4 FIRST AID MEASURES

Eye Contact
Immediately flush eyes with large amounts of water for at least 15 minutes while holding the eyelids open. If redness, swelling, pain and blister occur, transport to the nearest medical facility for additional treatment.

Skin Contact
If redness, swelling, pain and blister occur, transport to the nearest medical facility for additional treatment.

Inhalation
Remove the victim into fresh air. Seek for medical treatment in the event of symptoms.

Ingestion
Seek medical advice immediately. Rinse mouth with water and do not induce vomiting.

SECTION 5 FIRE FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing agents appropriate for surrounding fire.

Unsuitable Extinguishing Media
No restrictions

Specific Hazards Arising from the Chemical
Hazardous decomposition products. Burning produces irritant fumes.

Protection for Fire-fighters
Evacuate personnel to safe areas. Intervention only by capable personnel who are trained and aware of the hazards of the product. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.Clean contaminated surface thoroughly.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment
Refer to protective measures listed in sections 7 and 8. Prevent further leakage or spillage if safe to do so. Keep away from incompatible products. Isolate the area.

Environmental Precautions
Prevent discharges into the environment (sewers, rivers, soils). Immediately notify the appropriate authorities in case of discharge.

Method for Cleaning Up & Containment
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Call for assistance for disposal.

Emergency Procedures
Shut off leaks, if possible without personal risks. Prevent from spreading or entering drains, ditches or rivers by using sand, earth or other appropriate barriers. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

SECTION 7 HANDLING AND STORAGE

Precautions for Safe Handling
Do not eat, drink or smoke in work area. Avoid contact with eye, skin and clothing.
After handling, always wash hands thoroughly with soap and water. Use only with adequate ventilation. Avoid breathing vapors or spray mists. Avoid large quantities of material into live electrical motors and other such equipments.

Conditions for Safe Storage
Keep container dry. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place.

Storage Temperature : Ambient
Storage/Transport Pressure : Atmospheric

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
Quaternary ammonium compounds, di-C8-10-alkyldimethyl, chlorides	Not Established	Not Established	Not Established	Not Established
Benzethonium chloride	Not Established	Not Established	Not Established	Not Established
Isopropyl alcohol	200ppm	400ppm	400ppm	500ppm

Engineering Controls

Ensure adequate ventilation. Provide appropriate exhaust ventilation at machinery. Refer to protective measures listed in sections 7 and 8. Apply technical measures to comply with the occupational exposure limits.

Personal Protective Equipment (PPE)
Eye Protection
Eye protection is not required under normal conditions of use. If material is handled such that it could be splashed into eyes, wear plastic face shield or splash-proof safety goggles.

Skin Protection
No skin protection is required for single, short duration exposures. For prolonged or repeated exposures, use impervious clothing (boots, gloves, aprons, etc) over parts of the body subjected to exposure. Launder soiled clothes. Proper dispose of contaminated leather articles including shoes, which cannot be decontaminated. Use rubber gloves if necessary.

Respiratory Protection
In the case of hazardous fumes, wear self contained breathing apparatus. Self-contained breathing apparatus in medium confinement/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.

Thermal Hazards
NA

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear
Odour	Jasmine
Odour Threshold	Not Available
pH	7
Melting Point/ Freezing Point (°C)	Not determined
Initial boiling point and range (°C)	Not determined
Flash Point (°C) [According to ISO 3679, Closed Cup Testing]	Not Applicable
Evaporation Rate	Not determined
Flammability (solid, gas)	Not applicable
Vapour Pressure	Not determined
Upper/lower Flammability (Explosive) Limits:	Not determined
Vapour Density	Not determined
Relative Density	0.95 ± 0.03
Solubility in water	Soluble
Partition coefficient (N-	Not determined

Octanol/water)	
Auto-ignition Temperature (°C)	Not determined
Decomposition Temperature:	Not determined
Viscosity (mPa s)	Not determined

SECTION 10 STABILITY AND REACTIVITY

Reactivity/Incompatible Materials
Strong oxidizers, reducing agents, metals, acids, alkalis.

Chemical Stability
Stable at normal conditions of use.

Possibility of Hazardous Reactions
Not determined

Hazardous Decomposition Products
Not applicable

Conditions to Avoid
Not applicable

Materials to Avoid
Strong oxidizer, reducing agents, metals, acids, alkalis.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity (ATE_{mix})
Acute oral toxicity (LD50): 2104 mg/kg [Rat].
Acute dermal toxicity (LD50): 8810 mg/kg [Rabbit].
Inhalation toxicity (LC50): 72.6 mg/L

Carcinogenicity: Not listed under IARC.

SECTION 12 ECOLOGICAL INFORMATION

Toxicity
Non Toxic

Persistence/Degradability
Not expected to bio-accumulate significantly

Bio accumulative Potential
Not expected to bio-accumulate significantly

SECTION 13 DISPOSAL CONSIDERATIONS

Local Legislation

Dispose in compliance with local/federal and national regulations. It is recommended to contact the producer for recycling/recovery. Or send the product to an authorized hazardous waste incinerator.

Container Disposal
To avoid treatments, as far as possible, use dedicated containers. If not, rinse the empty containers with a low volatility hydrocarbon and treat the effluent in the same way as waste. Containers that cannot be cleaned must be treated as waste.

SECTION 14 TRANSPORT INFORMATION

Land (ADR)/ Sea (IMDG) (Annex II of MARPOL 73/78 and the IBC Code)/ Air (IATA)

UN number	Not regulated
UN Class	NA
Subsidiary risk	NA
Packing Group	NA
Proper shipping name	NA
HIN	NA
Marine Pollutant	NA

Special precautions:

Before transportation, make sure the containers are tightly sealed and that there are no liquid or gas leaks.

When transporting containers, be sure that they are tightly fastened. An appropriate buffer material should be placed between them to prevent them from bumping each other and being damaged during transport.

SECTION 15 REGULATORY INFORMATION

USA Information

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA)

Ingredient	CAS #	CERCLA RQ	RCRA Code
Isopropyl alcohol	67-63-0	-	-

Superfund Amendments and Reauthorization Act (SARA) Title III Information:
SARA Section 311/312 (40 CFR 370) Hazard Categories:

Ingredient	Acute Hazard	Chronic Hazard	Fire Hazard	Pressure Hazard	Reactivity Hazard
Quaternary ammonium compounds, di-C8-10-alkyldimethyl, chlorides	Yes	No	Yes	No	No

Isopropyl alcohol	Yes	Yes	Yes	No	No
Benzethonium chloride	Yes	Yes	No	No	No

This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313 (40 CFR 372): Isopropyl alcohol

SECTION 16 OTHER INFORMATION

Department issuing date sheet: Vance Chemicals Quality Control and Laboratory
Original Issue date: 1st January 2010
Revision no.: 04
Revision date: 28 January 2020

This product is intended for use by skilled individuals at their own risk. The information, data and recommendations set forth herein are presented in good faith and are believed to be correct as of the date hereof. The company / manufacturer makes no representations as to the completeness or accuracy of the Information and disclaims responsibility for any reliance thereon. The information is provided upon the condition that the persons receiving will make their own determination as to its suitability for their purposes prior to use. Any use of the Information must be determined by the user to be in accordance with applicable Federal, state and local laws and regulations. In no event will the company / manufacturer be responsible for damages of any nature whatsoever resulting from the use or reliance upon the Information.
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