



Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Product Name/Identifier	The Germ Killer (Aerosol)
Product Code	DG8312 – AL300N
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

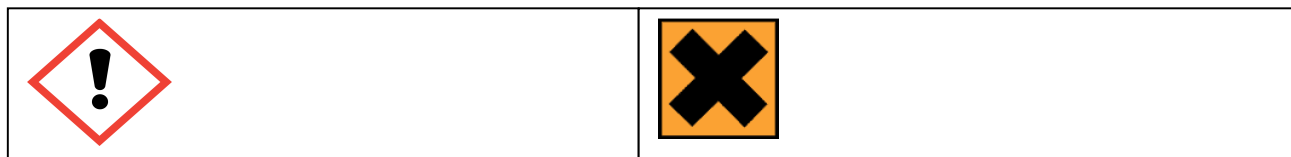
SECTION 2 HAZARDS IDENTIFICATION

GHS CLASSIFICATION

Health		Environmental		Physical
Skin irritation	Category 3	Aquatic chronic toxicity	Category 3	
Eye irritation	Category 2			

GHS LABEL:

EU LABEL:





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Hazard Statements:

Code	Health hazard statements	Hazard class	Hazard category
H316	Causes mild skin irritation	Skin corrosion/irritation (chapter 3.2)	3
H320	Causes eye irritation	Eye damage/irritation(chapter 3.3)	2
H412	Harmful to aquatic life with long lasting effects	Hazardous to the aquatic environment, long-term hazard (chapter 4.1)	3

Precautionary Statements

Prevention:

Code	Prevention precautionary statements	Hazard class	Hazard category
P264	Wash thoroughly after handling	Eye damage/irritation(chapter 3.3)	2
P273	Avoid release to the environment	Hazardous to the aquatic environment, long-term hazard (chapter 4.1)	3

Response:

Code	Response precautionary statements	Hazard class	Hazard category
P305+P351 +P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing	Eye damage/irritation(chapter 3.3)	2
P332+P313	If skin irritation occurs: Get medical advice/attention.	Skin corrosion/irritation (chapter 3.2)	3
P337+P313	If eye irritation persists: Get medical advice/attention.	Eye damage/irritation(chapter 3.3)	2

Disposal:

Code	Disposal precautionary statements	Hazard class	Hazard category
P501	Dispose of contents/container to local/regional/national/international regulations	Hazardous to the aquatic environment, long-term hazard (chapter 4.1)	3

SECTION 3 COMPOSITIONS / INFORMATION ON INGREDIENTS

Chemical Identity	CAS #	EINECS #	R Phrase	S Phrase	Weight %
Quaternary Ammonium Compounds	68424-95-3	270-331-5	R22, R34, R50	S26, S28, S37/39	<1



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Benzethonium chloride	121-54-0	204-479-9	R22,R34, R36/37	S24/25, S26,S28,S37/3 9,S61	<1
Isopropyl alcohol	67-63-0	200-661-7	R11,R36,R67	S7,S16, S24/25, S26	10-30
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. Get medical attention.
Skin contact	Remove contaminated clothing and shoes. Flush exposed area with large amount of water for at least 15 minutes followed by washing with soap. Get medical attention.
Inhalation	Remove to open area for fresh air. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	If swallowed, do not induce vomiting without medical advice. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspirations. Get medical attention.

SECTION 5 FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Use water spray, carbon dioxide, dry chemical powder, fog or foam to cool fire exposed surfaces and to protect personnel.
Unsuitable Extinguishing Media	Do not use water in a jet.
Specific Hazards Arising from the Chemical	Decomposition under fire conditions will generate toxic gas.
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 fire, wear self-contained breathing apparatus. When intervention in close proximity wear acid resistant over suit. 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 open flames, hot surfaces and sources of ignition. Keep away from incompatible products. Isolate the area. Cover the spreading liquid with foam in order to slow down the evaporation. Ventilate the area.
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Environmental Precautions	Prevent discharges into the environment (sewers, rivers, soils). Immediately notify the appropriate authorities in case of discharge.
Method for Cleaning Up & Containment	If possible, dam large quantities of liquid with sand or earth. Collect the product with suitable means. Place everything into a closed, labeled container compatible with the product. Flush with plenty of water. Prevent product from entering drains. Treat recovered material as described in the section "Disposal considerations".
Emergency Procedures	Shut off leaks, if possible without personal risks. Remove all possible ignitions in the surrounding area. Use appropriate containment to avoid environmental contamination. 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

<p>Precautions for Safe Handling: Use proper bonding and grounding (earthing) all equipment. Electrostatic discharge may cause fire. Prevent small spills and leakage to avoid slip hazard. Avoid contact with skin.</p> <p>Conditions for Safe Storage: Keep container dry. Keep in a cool, well-ventilated place. Ground all equipment containing material. Keep container tightly closed. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.</p> <p>Storage temperature: Ambient Storage/Transport Pressure: Atmospheric</p>

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
Quaternary Ammonium Compounds	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.
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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.
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Skin Protection	Apron/boots of neoprene if risk of splashing. For hand protection, use chemical resistant protective gloves such as Polyvinyl alcohol coated gloves.
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 - 9
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-Octanol/water)	Not determined
Auto-ignition Temperature (°C)	Not determined
Decomposition Temperature:	Not determined
Viscosity (mPa s)	Not determined



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SECTION 10 STABILITY AND REACTIVITY

Reactivity/Incompatible materials	Strong oxidizers.
Chemical Stability	Stable under ordinary conditions of use and storage.
Possibility of hazardous reactions	Combustion and thermal decomposition.
Hazardous decomposition products	Carbon monoxide, carbon dioxide and other organic compounds, toxic vapours/fumes of hydrogen chloride, amines, nitrogen oxides (NOx).
Conditions to avoid	Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid direct sunlight or ultraviolet sources. Avoid heat, sparks, open flames and other ignition sources.
Materials to avoid	Strong oxidizing agents, reducing agents, strong acids.

SECTION 11 TOXICOLOGICAL INFORMATION

Ingredient Name: Quaternary ammonium compounds
Effects on humans: <u>Eye contact</u> - Direct eye contacts may produce severe irritation and/or chemical burns with possible irreversible damage. <u>Skin contact</u> - Direct skin contacts may produce severe irritation and/or chemical burns with possible irreversible damage. <u>Inhalation</u> - Solvent vapours or mists of product may cause irritation of mucous membranes. Prolonged vapours or mists of product may produce drowsiness, lassitude and inability to concentrate. <u>Ingestion:</u> - Can cause immediate burning pain in the mouth, throat and abdomen; severe swelling of the larynx. Ingestion can cause skeletal muscle paralysis affecting the ability to breathe; circulatory shock; and/or convulsions.
Acute toxicity: Acute Oral rat LD50: 61-455 mg/kg Dermal rabbit LD50: 397 mg/kg
Skin corrosion/irritation: DOT test on rabbit: corrosive
Serious eye damage/irritation: Extreme irritation that did not clear by day 7, post dose
Carcinogenicity: Not carcinogenic under IARC

Ingredient Name: Benzethonium Chloride
Effects on humans: <u>Eye contact</u> - May cause eye irritation and possible burns.



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<p><u>Skin contact</u> - Causes skin burns.</p> <p><u>Inhalation</u> - May cause respiratory tract irritation.</p> <p><u>Ingestion:</u> Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhoea. Human fatalities have been reported form acute poisoning.</p>
<p>Acute toxicity: Acute Oral rat LD50: 295 mg/kg; Method: OECD Test Guideline 401</p>
<p>Skin corrosion/irritation: Rabbit, corrosive, 4h; DOT Test</p>
<p>Serious eye damage/irritation: Rabbit, 30ug Severe; Draize Test</p>
<p>Carcinogenicity: Not carcinogenic under IARC</p>

<p>Ingredient Name: Isopropyl alcohol</p>
<p>Effects on humans:</p> <p><u>Eye contact</u> - Can cause eye irritation</p> <p><u>Skin contact</u> - May cause mild skin irritation</p> <p><u>Inhalation</u> - Breathing in small amounts of this material during normal handling is not likely to cause harmful effects. However, breathing large amounts may be harmful and may affect the respiratory system and mucous membranes (irritation), behavior and brain (Central nervous system depression – headache, dizziness, drowsiness, stupor, in coordination, unconsciousness, coma and possible death), peripheral nerve and sensation, blood, urinary system, and liver.</p> <p><u>Ingestion</u> - Swallowing small amounts during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. Swallowing large amounts may cause gastrointestinal tract irritation with nausea, vomiting and diarrhea, abdominal pain. It also may affect the urinary system, cardiovascular system, sense organs, behavior or central nervous system (somnolence, generally depressed activity, irritability, headache, dizziness, drowsiness), liver, and respiratory system (breathing difficulty).</p>
<p>Acute toxicity: LD50 Rat (oral) > 5045 mg/kg LD50 Rabbit (dermal) > 12800 mg/kg; LC50Rat, 4 hours (inhalation) > 72.6 mg/L/4H;</p>
<p>Skin corrosion/irritation: Not irritating to skin. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.</p>
<p>Serious eye damage/irritation: Irritation</p>
<p>Skin sensitisation: Not a skin sensitizer</p>
<p>Carcinogenicity: Not classifiable as to its carcinogenicity to humans, IARC category 3.</p>
<p>Specific target organ toxicity: May cause damage to the following organs: kidneys, liver, skin, central nervous system (CNS)</p>



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Chronic effects: May cause defatting of the skin and dermatitis and allergic reaction. May cause adverse reproductive effects based on animal data (studies).

Special Remarks on Chronic Effects on Humans:

May cause adverse reproductive/teratogenic effects (fertility, fetotoxicity, developmental abnormalities (developmental toxin)) based on animal studies. Detected in maternal milk in human.

SECTION 12 ECOLOGICAL INFORMATION

Toxicity	<u>Acute ecotoxicity</u> Fishes, LC 50, 96 h, 231mg/l <u>Chronic toxicity</u> Daphnia magna, EC50, 48h, 18mg/l
Bio accumulative Potential	Not expected to bio accumulate significantly
Persistence/ Degradability	Will inherently biodegrade
Mobility in soil	It will have high mobility in soil and potential to leach into groundwater. Upon release to the environment, the compound is expected to partition and be transported in surface water and groundwater.

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.

Empty Container Warning (where applicable):

Empty containers may retain residue and can be dangerous. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 14 TRANSPORT INFORMATION

Land (ADR)

UN number	1950
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UN Class	2.2
Subsidiary risk	NA
Packing Group	III
Proper shipping name	Aerosol, non-flammable
HIN	NA

Sea (IMDG)

UN number	1950
UN Class	2.2
Subsidiary risk	NA
Packing Group	III
Proper shipping name	Aerosol, non-flammable
Marine pollutant	NA

Sea (Annex II of MARPOL 73/78 and the IBC Code)

Pollution category	NA
Ship type	NA
Product name	NA

Air (IATA)

UN number	1950
UN Class	2.2
Subsidiary risk	NA
Packing Group	III
Proper shipping name	Aerosol, non-flammable

Special precautions:

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



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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

EU Information

Risk Phrase:

R11	Highly flammable
R22	Harmful if swallowed
R34	Causes burns
R36	Irritating to eyes
R36/37	Irritating to eyes and respiratory system
R50	Very toxic to aquatic organisms
R67	Vapors may cause drowsiness and dizziness

Safety Phrase:

S7	Keep container tightly closed.
S16	Keep away from sources of ignition – No smoking
S24/25	Avoid contact with skin and eyes
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S28	After contact with skin, wash immediately with plenty of water
S37/39	Wear suitable gloves and eye/face protection
S61	Avoid release to the environment. Refer to special instructions/material safety data sheet

USA Information

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA)

<u>Ingredient</u>	<u>CAS #</u>	<u>CERCLA RQ</u>	<u>RCRA Code</u>
Isopropyl Alcohol	67-63-0	-	-

Superfund Amendments and Reauthorization Act (SARA) Title III Information:

SARA Section 311/312 (40 CFR 370) Hazard Categories:

<u>Ingredient</u>	<u>Acute Hazard</u>	<u>Chronic Hazard</u>	<u>Fire Hazard</u>	<u>Pressure Hazard</u>	<u>Reactivity Hazard</u>



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Quaternary Ammonium Compounds	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

Canada Information

WHMIS classification:

Isopropyl alcohol

- B2 Flammable Liquid
- D2B Toxic material causing other toxic effect

SECTION 16 OTHER INFORMATION

Department issuing date sheet: Vance Chemicals Quality Control and Laboratory

Original Issue date: 1st January 2010

Issue date: N.A

Revision date: 14th March 2011

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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