

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name V-Cide® Chemical Vapor Sterilant Solution

Other Means of Identification

SDS # VC338/SDS/I03
UN/ID No. UN1993
Product Code VC338

Recommended Use of the Chemical and Restrictions on Use

Recommended Use Chemical Sterilant.

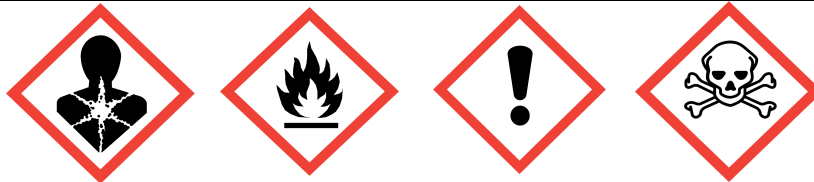
Details of the Supplier of the Safety Data Sheet

Supplier Address Certol International, LLC.
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www.Certol.com
Phone: 303-799-9401
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INFOTRAC: 1-800-535-5053 (North America)
INFOTRAC: 1-352-323-3500 (International)

2. HAZARDS IDENTIFICATION



Classification

Carcinogenicity	Category 1
Skin Sensitization	Category 1
Specific Target Organ Toxicity (Single Exposure)	Category 1
Specific Target Organ Toxicity (Repeat Exposure)	Category 1
Flammable Liquids	Category 2
Serious Eye Damage/Eye Irritation	Category 2/2A
Acute Toxicity - Oral	Category 3
Acute Toxicity - Dermal	Category 4
Acute Toxicity - Inhalation (Dusts/Mists/Vapors)	Category 4

Signal Word

Physical & Chemical Hazards:

Health Hazards:

Environmental Hazards:

Danger.
Flammable liquid and vapors.
Toxic if swallowed.
Harmful to skin if contact is prolonged.
May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
May cause cancer.
Causes damage to organs.
Causes damage to organs through prolonged or repeated exposure.
See Section 12.

2. HAZARDS IDENTIFICATION (continued)

GHS Label Element

Hazard Statements	H225	Flammable liquid and vapor.	
	H301	Toxic if swallowed.	
	H313	Harmful to skin if contact is prolonged.	
	H317	May cause an allergic skin reaction.	
	H319	Causes serious eye irritation.	
	H332	Harmful if inhaled.	
	H350	May cause cancer.	
	H370	Causes damage to organs.	
	H372	Causes damage to organs through prolonged or repeated exposure.	
	Precautionary Statements:		
Prevention		P201	Obtain special instructions before use.
		P210	Keep away from heat/sparks/open flames/hot surfaces.
		P233	Keep container tightly closed.
		P240	Ground/bond container and receiving equipment.
		P241	Use explosion-proof equipment.
		P242	Use only non-sparking tools.
		P243	Take action to prevent static discharge.
		P260	Do not breathe dust/fumes/gas/mist/vapors/spray.
		P270	Do not eat, drink or smoke when using this product.
	P271	Use only outdoors or in a well-ventilated area.	
	P272	Contaminated work clothing should not be allowed out of the workplace.	
	P280	Wear protective gloves, protective clothing, eye protection and face protection.	
Response	P314	Get medical advice/attention if you feel unwell.	
	P370	In case of fire, use CO ₂ , dry chemical or alcohol resistant foam to extinguish.	
Storage	P403	Store in a well-ventilated place.	
Disposal	P501	Dispose according to all local, state and federal regulations.	
Hazard(s) not otherwise classified(HNOC):		Not determined.	
Other Information:		Toxic to aquatic life.	

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
Ethyl Alcohol	64-17-5	57
Methyl Alcohol	67-56-1	25-40*
Isopropyl Alcohol	67-63-0	1-5*
Formaldehyde	50-00-0	0.23

* The exact percentage of methyl alcohol and isopropyl alcohol is a trade secret.

4. FIRST AID MEASURES

Inhalation	Move to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Consult a physician.
Eye Contact	Immediately flush with plenty of water. Remove any contact lenses, continue flushing for several minutes and call physician immediately.
Ingestion	Do not induce vomiting. Never give anything by mouth to a person who is unconscious. Call a physician or Poison Control Center.
Skin Contact	Wash off immediately with plenty of water for several minutes. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs: get medical advice/attention.
Symptoms	Skin contact can lead to drying, itching, stinging and irritation. Prolonged breathing of vapors may cause nausea, headache, weakness and/or dizziness. Exposed individuals may experience eye tearing, redness, and discomfort.
Warning	This product contains Methanol. Human exposure to methanol may result in illness, systemic poisoning, blindness, optic nerve damage and perhaps death, after being ingested, absorbed through the skin or inhaled.
Note to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use CO₂, dry chemical or alcohol resistant foam to extinguish.

Unsuitable Extinguishing Media

Not Determined.

Specific Hazards Arising from the Chemical

Extremely Flammable.

Hazardous Combustion Products

Carbon Monoxide.

Sensitivity to Static Discharge

Take precautionary measures against static discharge.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions

Use personal protective equipment as required. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area).

For Emergency Responders

Restrict access to spill area. Ventilate the area.

Environmental Precautions

Prevent entry into waterways, sewers, basements or confined areas.

Methods and Material for Containment and Cleaning Up

Methods for Containment

Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up

Flush small spills with water. Dike to collect large liquid spills.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Advice on Safe Handling

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wash thoroughly after handling.

Use only in well-ventilated areas.

Do not eat, drink or smoke when using this product.

Do not breathe dust/fumes/gas/mist/vapors/spray.

All equipment used when handling the product must be grounded.

Use non-sparking hand tools and explosion-proof electrical equipment.

Take precautionary measures against static discharges.

Do not use as a cleaning solvent.

Keep out of reach of children and pets.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place.

Packaging Materials

Keep in original container.

Incompatible Materials

Strong oxidizing agents. Concentrated inorganic acids.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ethyl alcohol 64-17-5	TLV: 1000 ppm TWA: 1880 mg/m ³	TWA: 1000 ppm TWA: 1900 mg/m ³	NIOSH REL: TWA 1000 ppm (1900 mg/m ³) NIOSH IDLH: 3300 ppm LEL
Methyl alcohol 67-56-1	TLV: 200 ppm; TWA: 262 mg/m ³ (skin) (ACGIH 1991-1992). TLV (as STEL): 250 ppm; 328 mg/m ³ (skin) (ACGIH 1992-1993).	TWA: 200 ppm (260 mg/m ³)	NIOSH REL: TWA 200 ppm (260 mg/m ³) ST 250 ppm (325 mg/m ³) (skin) NIOSH IDLH: 6000 ppm
Formaldehyde 50-00-0	ACGIH Ceiling: 0.3 ppm	TWA: 0.75 ppm (vacated) TWA: 3 ppm unless specified in 1910.1048 (vacated) STEL: 10 ppm 30 min. unless specified in 1910.1048 (vacated) Ceiling: 5 ppm unless specified in 1910.1048 STEL: 2 ppm see 1910.1048	IDLH: TWA 20 ppm TWA: 0.016 ppm
Isopropyl Alcohol 67-63-0	STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m ³ TWA: 400 ppm (Vacated) TWA: 980 mg/m ³ (Vacated) STEL: 500 ppm (Vacated) STEL: 1225 mg/m ³ (Vacated)	IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³

Exposure Guidelines

Appropriate Engineering Controls

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection

Skin and Body Protection

Respiratory Protection

General Hygiene Considerations

See above occupational exposure limits.

Eyewash stations and showers.

Wear goggles, chemical safety glasses or a face protection shield.

Chemical resistant, non-latex and impermeable gloves.

Wear appropriate clothing to prevent repeated or prolonged skin contact.

Under normal conditions a respirator is not normally required. A mask or respirator may be used if vapor concentration is high.

Handle in accordance with good industrial hygiene and safety practices as listed in OSHA 3143 1998 (Revised).

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	Liquid.	Appearance	Clear Liquid.	Color	Clear.	Odor	Alcohol.
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Property	Values	Property	Values
pH	5.8 - 7.0 (77°F / 25°C)	Vapor Density	1.59
Melting Point / Freezing Point	> 5°F / > -15°C	Specific Gravity	0.795 - 0.825 (60°F / 15.5°C)
Boiling Point / Boiling Range	158 - 176°F / 70 - 80°C	Water Solubility	Completely Soluble.
Flash Point	65°F / 18°C	Partition Coefficient	Not Determined.
Evaporation Rate	1.5	Autoignition Temperature	780 °F / 416°C
Flammability (Solid/Gas)	N/A- Liquid.	Decomposition Temperature	Not Determined.
Flammability Limits In Air		Kinematic Viscosity	Not Determined.
Upper Flammability Limit	36% (Methanol)	Dynamic Viscosity	Not Determined.
Lower Flammability Limit	6% (Methanol)	Explosive Properties	Possible > 780°F / 416°C
Vapor Pressure	50.0 mm Hg	Oxidizing Properties	Not Determined.

10. STABILITY AND REACTIVITY

Reactivity	Not reactive under normal conditions.
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous Polymerization	Hazardous polymerization will not occur.
Conditions to Avoid	Avoid high temperatures.
Incompatible Materials	Strong oxidizing agents. Concentrated inorganic acids.
Hazardous Decomposition Products	Carbon monoxide. Stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure	Eye. Skin Contact. Inhalation. Ingestion.
Information on Likely Routes of Exposure	
Ingestion	May be harmful or fatal; may cause blindness (High-level exposure may induce birth defects).
Inhalation	Headache, nausea and drowsiness.
Skin Contact	May cause irritation and dryness (Not a primary dermal irritant but may cause an allergic skin reaction).
Eye Contact	Causes substantial but temporary eye damage.

Component Information

Chemical Name	Oral LD ₅₀	Dermal LD ₅₀	Inhalation LC ₅₀
Ethyl alcohol (64-17-5)	7060 mg/kg (Rat)	N/A	124.7 mg/L (Rat) 4 hr.
Methyl alcohol (67-56-1)	5628 mg/kg (Rat)	15800 mg/kg (Rabbit)	83.2 mg/L (Rat) 4 hr. 64000 ppm (Rat) 4 hr.
Formaldehyde (50-00-0)	500 mg/kg (Rat)	N/A	0.578 mg/L (Rat) 4 hr.
Isopropyl Alcohol 67-63-0	4396 mg/kg (Rat)	12800 mg/kg (Rat)	72.6 mg/L (Rat) 4 hr.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure

Carcinogenicity	The product as a whole has not been tested. May cause cancer. Ethanol has been shown to be carcinogenic in long-term studies only when consumed as an alcoholic beverage.
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Chemical Name	ACGIH	IARC	NTP	OSHA
Ethyl alcohol 64-17-5	A3	Group 1	N/A	X
Formaldehyde 50-00-0	A2	Group 1	Known	X
Isopropyl Alcohol 67-63-0	A4	Group 3	N/A	N/A

ACGIH (The American Conference of Governmental Industrial Hygienists)

- A2 - Suspected Human Carcinogen.
- A3 - Animal Carcinogen.
- A4 - Not Classifiable as a Human Carcinogen.

IARC (International Agency for Research on Cancer)

- Group 1 - Carcinogenic to Humans.
- Group 3 - Not Carcinogenic to Humans.

NTP (National Toxicology Program)

Listing of Formaldehyde as "Known to be a Human Carcinogen".

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present.

STOT - Single Exposure

May cause damage to organs.

STOT - Repeated Exposure

Causes damage to organs through prolonged or repeated exposure.

Numerical Measures of Toxicity

Not Determined.

12. ECOLOGICAL INFORMATION

Ecotoxicity

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic organisms.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ethyl alcohol 64-17-5	No Information	Known Toxin	Known Toxin	Known Toxin
Methyl alcohol 67-56-1	No Information	Known Toxin	Known Toxin	No Information
Formaldehyde 50-00-0	No Information	Known Toxin	Known Toxin	Known Toxin
Isopropyl Alcohol 67-63-0	Known Toxin	Known Toxin	No Information	Known Toxin

Persistence and Degradability

Not Determined.

Bioaccumulation

Not Determined.

Mobility

Chemical Name	Partition Coefficient
Ethyl alcohol 64-17-5	-0.31
Methyl alcohol 67-56-1	-0.77
Formaldehyde 50-00-0	0.35
Isopropyl Alcohol 67-63-0	0.05

Other Adverse Effects

Not Determined.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes

Dispose according to all local, state and federal regulations.

Contaminated Packaging

Dispose according to all local, state and federal regulations.

Chemical Name	RCRA	RCRA - Basis For Listing	RCRA - D Series Waste	RCRA - U Series Wastes
Methyl alcohol 67-56-1	N/A	Included in waste stream: F039	N/A	U154
Formaldehyde 50-00-0	U122	Included in waste streams: K009, K010, K038, K040, K156, K157	N/A	U122

Chemical Name	California Hazardous Waste Status
Ethyl alcohol 64-17-5	Toxic Ignitable
Methyl alcohol 67-56-1	Toxic Ignitable
Formaldehyde 50-00-0	Toxic Ignitable
Isopropyl Alcohol 67-63-0	Toxic Ignitable

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances. Based on package size, product may be eligible for limited quantity exception.

DOT	UN/ID No.	UN1993
	Proper Shipping Name	Flammable Liquid, n.o.s (Contains Ethanol, Methanol)
	Hazard Class	3
	Packing Group	II
IATA	UN/ID No.	UN1993
	Proper Shipping Name	Flammable Liquid, n.o.s (Contains Ethanol, Methanol)
	Hazard Class	3
	Subsidiary Hazard Class	6.1
IMDG	Packing Group	II
	UN/ID No.	UN1993
	Proper Shipping Name	Flammable Liquid, n.o.s (Contains Ethanol, Methanol)
	Hazard Class	3
	Subsidiary Hazard Class	6.1
	Packing Group	II

15. REGULATORY INFORMATION

International Inventories Not Determined.

- Legend:**
- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*
 - DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*
 - EINECS/ELINCS - European Inventory of Existing Chemical Substances/
European List of Notified Chemical Substances*
 - ENCS - Japan Existing and New Chemical Substances*
 - IECSC - China Inventory of Existing Chemical Substances*
 - KECL - Korean Existing and Evaluated Chemical Substances*
 - PICCS - Philippines Inventory of Chemicals and Chemical Substances*

US Federal Regulations

SARA 311/312 Hazard Categories

Chemical Name	Hazardous Substances RQs	CERCLA /SARA RQ	Reportable Quantity (RQ)
Methyl alcohol 67-56-1	5000 lb.	5000 lb.	RQ 5000 lb. final RQ RQ 2270 kg final RQ
Formaldehyde 50-00-0	100 lb.	100 lb.	RQ 100 lb. final RQ RQ 45.4 kg final RQ

SARA 313

Chemical Name	CAS No	Weight %	SARA 313-Threshold Values %
Methyl alcohol	67-56-1	25 - 40%	1.0%
Formaldehyde	50-00-0	0.23%	0.1%
Isopropyl Alcohol	67-63-0	1 - 5%	1.0%

Clean Water Act (CWA)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
50-00-0	100 lb.	N/A	N/A	X

15. REGULATORY INFORMATION (continued)

US State Regulations

California Proposition 65

Chemical Name	California Proposition 65
Ethyl alcohol - 64-17-5	Carcinogen, Developmental
Methyl alcohol - 67-56-1	Developmental
Formaldehyde - 50-00-0	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Ethyl alcohol 64-17-5	X	X	X
Methyl alcohol 67-56-1	X	X	X
Formaldehyde 50-00-0	X	X	X
Isopropyl Alcohol 67-63-0	X	X	X

16. OTHER INFORMATION

NFPA

Health Hazards 3	Flammability 3	Instability 1	Special Hazards Not Determined.
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HMIS

Health Hazards Not Determined.	Flammability Not Determined.	Physical Hazards Not Determined.	Personal Protection Not Determined.
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Issue Date June 2016.
Revision Date May 2017.
Revision Note New format.
Disclaimer

This Safety Data Sheet was prepared to comply with the current OSHA Hazard Communication Standard adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees.

End of Safety Data Sheet