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**Version** 1

## 1. PRODUCT AND COMPANY IDENTIFICATION

### Product Identifier

**Product Name** V-Cide<sup>®</sup> Chemical Vapor Sterilant Solution

### Other Means of Identification

**SDS #** VC338/SDS/01

### 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.  
6120 East 58th Avenue  
Commerce City, Colorado 80022  
[www.Certol.com](http://www.Certol.com)

### Emergency Telephone Number

#### **Company Phone Number(s)**

Phone: 303-799-9401  
Toll-Free: 1-800-843-3343  
Fax: 303-799-9408

#### **24 Hour Emergency Telephone**

INFOTRAC: 1-800-535-5053 (North America)  
INFOTRAC: 1-352-323-3500 (International)

## 2. HAZARDS IDENTIFICATION

### Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 1
Specific target organ toxicity (repeated exposure)	Category 1
Flammable Liquids	Category 2

### Signal Word

Danger / Poison.

### Hazard Statements

Harmful if swallowed.  
Harmful to skin if contact is prolonged.  
Harmful if inhaled.  
Can cause severe eye irritation.  
May cause an allergic skin reaction.  
May cause cancer (per California Prop 65).  
Causes damage to organs through prolonged or repeated exposure.  
Highly flammable liquid and vapor.

### Appearance

Clear Liquid.

### Physical State

Liquid.

### Odor

Alcohol.



### Precautionary Statements-Prevention

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Use personal protective equipment as required.  
Wash face, hands and any exposed skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only in a well-ventilated area.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Keep container tightly closed.  
Ground/bond receiving equipment.  
Use explosion-proof equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.

## 2. HAZARDS IDENTIFICATION (continued)

### Precautionary Statements-Response

**IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a Poison Control Center or doctor/physician.

**IF SWALLOWED:** Immediately call a Poison Control Center or doctor/physician. Rinse mouth.

**IF EXPOSED:** Call a Poison Control Center or doctor/physician.

**IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a Poison Control Center or doctor/physician.

**IF ON SKIN (or hair):** Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

**IF SKIN IRRITATION OR RASH OCCUR:** Get medical advice/attention. Call a Poison Control Center or doctor/physician if you feel unwell.

**IN CASE OF FIRE:** Use water, CO<sub>2</sub>, dry chemical or foam for extinction.

### Precautionary Statements - Storage

Store in a well-ventilated place. Keep cool.

**Keep out of the reach of children and pets.**

### Precautionary Statements - Disposal

Dispose according to all local, state and federal regulations. Waste should not be released into the sewer system.

### Hazards not otherwise classified (HNOC)

Not Applicable.

### Other Information

Toxic to aquatic life.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%	Trade Secret
Ethyl alcohol	64-17-5	57%	N/A
Methyl alcohol	67-56-1	25 - 40%	*
Formaldehyde	50-00-0	0.23%	N/A

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

## 4. FIRST AID MEASURES

### First Aid Measures

<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Call a physician or Poison Control Center immediately.
<b>Eye Contact</b>	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Call physician immediately.
<b>Ingestion</b>	Rinse mouth. Drink large amounts of water. Induce vomiting, but only if victim is fully conscious. Never give anything by mouth to a person who is unconscious or convulsing. Call a physician or Poison Control Center immediately.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention. Call a physician if you feel unwell.

### Most Important Symptoms and Effects, both Acute and Delayed

<b>Symptoms</b>	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.
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**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.

### Indication of any Immediate Medical Attention and Special Treatment Needed

<b>Note to Physicians</b>	Treat symptomatically.
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## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media

Use water, CO<sub>2</sub>, dry chemical or foam for extinction.

### 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.  
See Section 12 for additional ecological information.

### 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.  
Use personal protection recommended in Section 8.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only in well-ventilated areas.  
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 the 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.

**Keep out of the reach of children and pets.**

#### **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 <sup>3</sup>	TWA: 1000 ppm TWA: 1900 mg/m <sup>3</sup>	NIOSH REL: TWA 1000 ppm (1900 mg/m <sup>3</sup> ) NIOSH IDLH: 3300 ppm LEL
Methyl alcohol 67-56-1	TLV: 200 ppm; TWA: 262 mg/m <sup>3</sup> (skin) (ACGIH 1991-1992). TLV (as STEL): 250 ppm; 328 mg/m <sup>3</sup> (skin) (ACGIH 1992-1993).	TWA: 200 ppm (260 mg/m <sup>3</sup> )	NIOSH REL: TWA 200 ppm (260 mg/m <sup>3</sup> ) ST 250 ppm (325 mg/m <sup>3</sup> ) (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

### Appropriate Engineering Controls

#### Engineering Controls

Apply technical measures to comply with the occupational exposure limits.  
Eyewash stations.

### Individual Protection Measures, such as Personal Protective Equipment

#### Eye/Face Protection

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

#### Skin and Body Protection

Chemical resistant, impermeable gloves.

Wear appropriate clothing to prevent repeated or prolonged skin contact.

#### Respiratory Protection

Under normal conditions a respirator is not normally required.

A mask or respirator may be used if vapor concentration is high.

#### General Hygiene Considerations

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

<b>Physical State</b>	Liquid.	
<b>Appearance</b>	Clear Liquid.	
<b>Color</b>	Clear.	
<b>Odor</b>	Alcohol.	
<b>Property</b>	<b>Values</b>	<b>Remarks * Method</b>
<b>pH</b>	5.8 - 7.0	68°F (20°C)
<b>Melting Point / Freezing Point</b>	> 5°F / > -15°C	
<b>Boiling Point / Boiling Range</b>	158 - 176°F / 70 - 80°C	(Approximate)
<b>Flash Point</b>	65°F / 18°C	ASTM D56
<b>Evaporation Rate</b>	1.5	(Butyl acetate = 1) (Approximate)
<b>Flammability (Solid/Gas)</b>	N/A - Liquid.	
<b>Flammability Limits In Air</b>		
<b>Upper Flammability Limit</b>	36%	(Methanol)
<b>Lower Flammability Limit</b>	6.0%	(Methanol)
<b>Vapor Pressure</b>	50.0 mm Hg	(Approximate) @ 68°F (20°C)
<b>Vapor Density</b>	1.59	(Air = 1) (Approximate)
<b>Specific Gravity</b>	0.795 - 0.825 g/cc	68°F (20°C) (Water = 1)
<b>Water Solubility</b>	Completely Soluble.	
<b>Partition Coefficient</b>	See Section 12.	
<b>Autoignition Temperature</b>	780°F / 416°C	(Approximate)
<b>Decomposition Temperature</b>	Not Determined.	
<b>Kinematic Viscosity</b>	Not Determined.	
<b>Dynamic Viscosity</b>	Not Determined.	
<b>Explosive Properties</b>	Possible for temperatures above 780°F / 416°C	
<b>Oxidizing Properties</b>	None.	

## 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

### Information on Likely Routes of Exposure

#### Product Information

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

#### Component Information

Chemical Name	Oral LD <sub>50</sub>	Dermal LD <sub>50</sub>	Inhalation LC <sub>50</sub>
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.

### Information on Physical, Chemical and Toxicological Effects

**Symptoms** Please see section 4 of this SDS for symptoms.

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

**Carcinogenicity** May cause cancer. Ethanol has been shown to be carcinogenic in long-term studies only when consumed as an alcoholic beverage.

Chemical Name	ACGIH	IARC	NTP	OSHA
Ethyl alcohol 64-17-5	A3	Group 1	Known	X
Formaldehyde 50-00-0	A2	Group 1	Reasonably Anticipated	X

#### **ACGIH (American Conference of Governmental Industrial Hygienists)**

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

#### **IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

#### **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

### Persistence and Degradability

Not Determined.

### Bioaccumulation

Not Determined.

### Mobility

Not Determined.

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

### Other Adverse Effects

Not Determined.

### 13. DISPOSAL CONSIDERATIONS

#### Waste Treatment Methods

##### Disposal of Wastes

Dispose according to all local, state and federal regulations. Waste should not be disposed of by release into the sewer system.

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

### 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 Liquids, n.o.s. (Ethanol, Methanol)
Hazard Class	3
Packing Group	II

**IATA**

UN/ID No	UN1992
Proper Shipping Name	Flammable Liquids, n.o.s. (Ethanol, Methanol)
Hazard Class	3
Subsidiary Hazard Class	6.1
Packing Group	II

**IMDG**

UN/ID No	UN1992
Proper Shipping Name	Flammable Liquids, n.o.s. (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 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%

#### CWA (Clean Water Act)

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

#### 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

### US State Regulations

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

## 16. OTHER INFORMATION

### NFPA

<b>Health Hazards</b>	<b>Flammability</b>	<b>Instability</b>	<b>Special Hazards</b>
3	3	1	Not Determined.

### HMIS

<b>Health Hazards</b>	<b>Flammability</b>	<b>Physical Hazards</b>	<b>Personal Protection</b>
Not Determined.	Not Determined.	Not Determined.	Not Determined.

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End of Safety Data Sheet