SAFETY DATA SHEETS

This SDS packet was issued with item:

072267524

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

072267516

SAFETY DATA SHEET

Issue Date June 2016
Revision Date May 2017 **Version** 3

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.

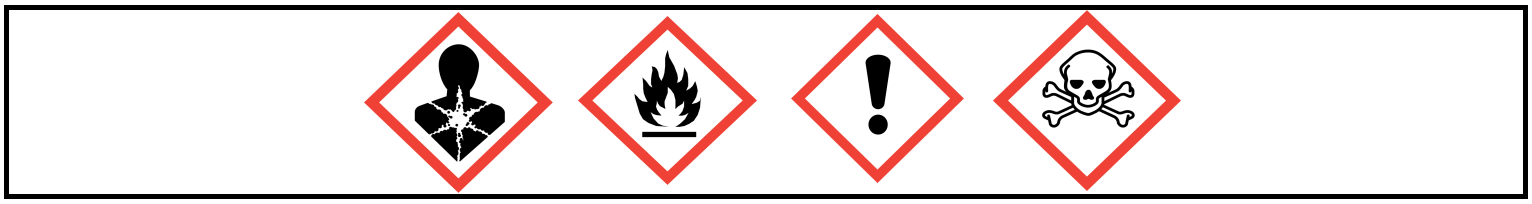
Details of the Supplier of the Safety Data Sheet

Supplier Address Certol International, LLC.
6120 East 58th Avenue
Commerce City, Colorado 80022
www.Certol.com
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

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 Danger.

Physical & Chemical Hazards: Flammable liquid and vapors.

Health Hazards: 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.

Environmental Hazards: 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 CO_2, 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 — See above occupational exposure limits.

Appropriate Engineering Controls — Eyewash stations and showers.

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, non-latex and 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

Physical State	Liquid.	**Appearance**	Clear Liquid.	**Color**	Clear.	**Odor**	Alcohol.

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.

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
	Packing Group	II
IMDG	**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	Flammability	Instability	Special Hazards
3	3	1	Not Determined.

HMIS

Health Hazards	Flammability	Physical Hazards	Personal Protection
Not Determined.	Not Determined.	Not Determined.	Not Determined.

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 Classifcation 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