



SAFETY DATA SHEET

V-Cide® Chemical Vapor Sterilant Solution

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200.

1. Identification

Product identifier

Product name V-Cide® Chemical Vapor Sterilant Solution

Product number VC338

Recommended use of the chemical and restrictions on use

Application Chemical Sterilant.

Details of the supplier of the safety data sheet

Manufacturer MICROCARE, LLC
6120 E 58th Ave
Commerce City, CO 80022
United State of America
www.microcare.com/certol
Tel: +1 303 799 9401 Toll Free +1 800 843 3343

Emergency telephone number

Emergency telephone INFOTRAC 1-800-535-5053 (U.S.A. and CANADA)
1-352-323-3500 (from anywhere in the world)

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Flam. Liq. 2 - H225

Health hazards Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331 Eye Irrit. 2A - H319 Skin Sens. 1 - H317 Carc. 1B - H350 STOT SE 1 - H370

Environmental hazards Not Classified

Label elements

Hazard symbols



Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapor.
H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H350 May cause cancer.
H370 Causes damage to organs .

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Precautionary statements

P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
 P240 Ground/ bond container and receiving equipment.
 P241 Use explosion-proof electrical equipment.
 P242 Use only non-sparking tools.
 P243 Take precautionary measures against static discharge.
 P260 Do not breathe vapor/ spray.
 P261 Avoid breathing vapor/ spray.
 P264 Wash contaminated skin thoroughly after handling.
 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 must not be allowed out of the workplace.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P301+P310 If swallowed: Immediately call a poison center/ doctor.
 P302+P352 If on skin: Wash with plenty of water.
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.
 P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308+P311 If exposed or concerned: Call a poison center or doctor.
 P308+P313 If exposed or concerned: Get medical advice/ attention.
 P311 Call a poison center/ doctor.
 P312 Call a poison center/ doctor if you feel unwell.
 P321 Specific treatment (see medical advice on this label).
 P330 Rinse mouth.
 P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
 P337+P313 If eye irritation persists: Get medical advice/ attention.
 P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P403+P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.
 P501 Dispose of contents/ container in accordance with national regulations.

Contains

Methanol, Formaldehyde

3. Composition/information on ingredients

Mixtures

Ethanol CAS number: 64-17-5	30-60%
Methanol CAS number: 67-56-1	30-60%
Isopropyl Alcohol CAS number: 67-63-0	1-5%

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Formaldehyde	<1%
CAS number: 50-00-0	

Composition

4. First-aid measures

Description of first aid measures

Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. Get medical attention immediately.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.
Skin Contact	After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Wash clothing and clean shoes thoroughly before reuse. Get medical attention promptly if symptoms occur after washing. Get medical attention if symptoms are severe or persist.
Eye contact	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Most important symptoms and effects, both acute and delayed

General information	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.
Inhalation	Vapors may cause headache, fatigue, dizziness and nausea. Gas or vapor may irritate the respiratory system. Toxic by inhalation.
Ingestion	Ingestion may cause severe irritation of the mouth, the esophagus and the gastrointestinal tract. Toxic if swallowed.
Skin contact	Skin contact can lead to drying, itching, stinging, and irritation. Toxic in contact with skin.
Eye contact	Exposed individuals may experience eye tearing, redness, and discomfort. Causes serious eye irritation.

Indication of immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide or dry powder.
Unsuitable extinguishing media	None known.

Special hazards arising from the substance or mixture

Specific hazards	Extremely flammable. Take precautionary measures against static discharges.
Hazardous combustion products	Carbon monoxide (CO).

Advice for firefighters

Protective actions during firefighting	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
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6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions For personal protection, see Section 8.

For emergency responders Restrict access to spill area. Ventilate area. Eliminate all ignition sources if safe to do so.

Environmental precautions

Environmental precautions Avoid the spillage or runoff entering drains, sewers or watercourses. Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for cleaning up Stop leak if safe to do so. Dike to collect large liquid spills. Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely.

7. Handling and storage

Precautions for safe handling

Usage precautions Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash hands thoroughly after handling. Use only in well-ventilated areas. Do not eat, drink or smoke when using this product. Do not breathe gas, fume, vapours or spray. All equipment used when handling the product must be grounded. Use only non-sparking tools. Use explosion proof electric equipment. Take precautionary measures against static discharge. Do not use as a cleaning solvent. Keep out of the reach of children.

Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep only in the original container. Store away from incompatible materials (see Section 10). Keep at temperature not exceeding 30°C/86°F.

8. Exposure controls/Personal protection

Control parameters

Occupational exposure limits

Ethanol

Short-term exposure limit (15-minute): ACGIH 1000 ppm 1880 mg/m³

A3

Long-term exposure limit (8-hour TWA): OSHA 1000 ppm 1900 mg/m³

Methanol

Long-term exposure limit (8-hour TWA): ACGIH 200 ppm 262 mg/m³

Short-term exposure limit (15-minute): ACGIH 250 ppm 328 mg/m³

Sk

Long-term exposure limit (8-hour TWA): OSHA 200 ppm 260 mg/m³

Isopropyl Alcohol

Long-term exposure limit (8-hour TWA): OSHA 400 ppm 980 mg/m³

Long-term exposure limit (8-hour TWA): ACGIH 200 ppm 492 mg/m³

Short-term exposure limit (15-minute): ACGIH 400 ppm 984 mg/m³

A4

Formaldehyde

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Long-term exposure limit (8-hour TWA): ACGIH 0.1 ppm

Short-term exposure limit (15-minute): ACGIH 0.3 ppm

A1, DSens, RSens

Long-term exposure limit (8-hour TWA): OSHA 0.75 ppm

Short-term exposure limit (15-minute): OSHA 2 ppm

ACGIH = American Conference of Governmental Industrial Hygienists.

OSHA = Occupational Safety and Health Administration.

A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans.

Sk = Danger of cutaneous absorption.

A1 = Confirmed Human Carcinogen.

A4 = Not Classifiable as a Human Carcinogen.

DSens = Dermal sensitizer.

RSens = Respiratory sensitizer.

Ethanol (CAS: 64-17-5)

Ingredient comments WEL = Workplace Exposure Limits

Methanol (CAS: 67-56-1)

Biological limit values 15 mg/l

Exposure controls

Appropriate engineering controls	Provide eyewash station and safety shower.
Personal protection	Handle in accordance with good industrial hygiene and safety practices. Wash hands after handling.
Eye/face protection	Wear tight-fitting, chemical splash goggles or face shield.
Hand protection	It is recommended that chemical-resistant, impervious gloves are worn.
Other skin and body protection	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
Respiratory protection	No specific requirements are anticipated under normal conditions of use. If ventilation is inadequate, suitable respiratory protection must be worn.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Liquid
Color	Colorless.
Odor	Alcoholic.
pH	pH (concentrated solution): 5.8-7.0
Melting point	>-15°C/>5°F
Initial boiling point and range	70-80°C/158-176°F
Flash point	18°C/65°F
Evaporation rate	1.5
Flammability (solid, gas)	N/A-liquid
Vapor pressure	50.0 mm Hg @ °C
Vapor density	1.59

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Relative density	0.795-0.825 @ 15.5°C/60°F
Solubility(ies)	Completely soluble in water.
Partition coefficient	No specific test data are available.
Auto-ignition temperature	416°C/780°F
Decomposition Temperature	No information available.
Viscosity	Not available.
Explosive properties	The product is flammable. > @ 416°C/780°F
Oxidizing properties	Not available.

10. Stability and reactivity

Reactivity	Not reactive under normal conditions.
Stability	Stable under the prescribed storage conditions.
Possibility of hazardous reactions	Under normal conditions of storage and use, no hazardous reactions will occur.
Conditions to avoid	High temperatures
Materials to avoid	Strong oxidizing agents. Strong acids.
Hazardous decomposition products	Carbon monoxide (CO).

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 280.13

Acute toxicity - dermal

ATE dermal (mg/kg) 840.4

Acute toxicity - inhalation

ATE inhalation (gases ppm) 283,048.37

ATE inhalation (vapours mg/l) 8.4

ATE inhalation (dusts/mists mg/l) 1.4

Inhalation	May cause nausea, headache, dizziness and intoxication.
Ingestion	Harmful if swallowed. May be fatal if swallowed or inhaled May cause blindness.
Skin Contact	Causes skin and eye irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Route of exposure	Skin and/or eye contact Inhalation Ingestion

Toxicological information on ingredients.

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Ethanol

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 20,000.0

ATE inhalation (vapours mg/l) 20,000.0

Methanol

Acute toxicity - oral

Notes (oral LD₅₀) Acute Tox. 3 - H301 Toxic if swallowed.

ATE oral (mg/kg) 100.0

Acute toxicity - dermal

Notes (dermal LD₅₀) Acute Tox. 3 - H311 Toxic in contact with skin.

ATE dermal (mg/kg) 300.0

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Acute Tox. 3 - H331 Toxic if inhaled.

ATE inhalation (vapours mg/l) 3.0

ATE inhalation (dusts/mists mg/l) 0.5

Skin corrosion/irritation

Animal data Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitization

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

Skin sensitization Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

IARC carcinogenicity None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development Based on available data the classification criteria are not met.

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Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 1 - H370 Causes damage to organs .

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

General information

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation

A single exposure may cause the following adverse effects: Drowsiness, dizziness, disorientation, vertigo. Unconsciousness. High concentrations may be fatal.

Ingestion

May cause stomach pain or vomiting. May cause severe internal injury.

Skin Contact

A single exposure may cause the following adverse effects: Pain.

Eye contact

No specific symptoms known.

Route of exposure

Ingestion Inhalation Skin and/or eye contact

Target Organs

No specific target organs known.

Isopropyl Alcohol

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 16,000.0

ATE inhalation (vapours mg/l) 16,000.0

Carcinogenicity

IARC carcinogenicity IARC Group 3 Not classifiable as to its carcinogenicity to humans.

NTP carcinogenicity Not listed.

OSHA Carcinogenicity Not listed.

Formaldehyde

Acute toxicity - oral

ATE oral (mg/kg) 100.0

Acute toxicity - dermal

ATE dermal (mg/kg) 300.0

Carcinogenicity

IARC carcinogenicity IARC Group 1 Carcinogenic to humans.

NTP carcinogenicity Known human carcinogen.

OSHA Carcinogenicity Listed as a carcinogen under OSHA

Denatonium benzoate

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Acute toxicity - oral

ATE oral (mg/kg) 500.0

Acute toxicity - inhalation

ATE inhalation (dusts/mists mg/l) 1.5

12. Ecological information

Ecotoxicity An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Ecological information on ingredients.

Methanol

Ecotoxicity Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

Ecological information on ingredients.

Ethanol

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: >10,000 mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 7,800 mg/l, Daphnia magna

Acute toxicity - aquatic plants , 96 hours: 1000 mg/l, Freshwater algae

Methanol

Toxicity Based on available data the classification criteria are not met.

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: >100 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: >10000 mg/l, Daphnia magna

Isopropyl Alcohol

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 9,640 mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 5102 mg/l, Daphnia magna

Acute toxicity - aquatic plants IC₅₀, 72 hours: >2,000 mg/l, Algae

Persistence and degradability

Ecological information on ingredients.

Ethanol

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Persistence and degradability The product is expected to be biodegradable.

Methanol

Persistence and degradability The degradability of the product is not known.

Bioaccumulative potential

Partition coefficient No specific test data are available.

Ecological information on ingredients.

Ethanol

Bio-Accumulative Potential Bioaccumulation is unlikely.

Partition coefficient No information available.

Methanol

Bio-Accumulative Potential No data available on bioaccumulation.

Partition coefficient : -0.77

Isopropyl Alcohol

Partition coefficient : 0.05

Mobility in soil

Ecological information on ingredients.

Ethanol

Mobility The product is soluble in water.

Methanol

Mobility No data available.

Other adverse effects

Ecological information on ingredients.

Methanol

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

General information The generation of waste should be minimized or avoided wherever possible.

Disposal methods Dispose of contents/container in accordance with national regulations. Dispose of contents/container in accordance with regional regulations. Dispose of contents/container in accordance with local regulations. Avoid the spillage or runoff entering drains, sewers or watercourses.

14. Transport information

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UN Number

UN No. (TDG)	UN1993
UN No. (IMDG)	UN1993
UN No. (ICAO)	UN1993

UN proper shipping name

Proper shipping name (TDG)	LIMITED QUANTITY
Proper shipping name (IMDG)	FLAMMABLE LIQUID, N.O.S. (ETHANOL, METHANOL), 3, PG II, LIMITED QUANTITY
Proper shipping name (ICAO)	FLAMMABLE LIQUID, N.O.S. (ETHANOL, METHANOL), 3, PG II, LIMITED QUANTITY
Proper shipping name (DOT)	LIMITED QUANTITY

Transport hazard class(es)

IMDG Class	3
ICAO class/division	3

Packing group

IMDG packing group	II
ICAO packing group	II

Environmental hazards

Environmentally Hazardous Substance
No.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US Federal Regulations

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

The following ingredients are listed:

Formaldehyde

Methanol

SARA 313 Emission Reporting

The following ingredients are listed:

Formaldehyde

Methanol

SARA (311/312) Hazard Categories

Acute
Chronic
Fire

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

This product can expose you to chemicals including METHANOL, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

This product can expose you to FORMALDEHYDE ...%, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

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California Air Toxics "Hot Spots" (A-I)

The following ingredients are listed:

Formaldehyde

Methanol

Isopropyl Alcohol

California Directors List of Hazardous Substances

The following ingredients are listed:

Formaldehyde

Methanol

Isopropyl Alcohol

Ethanol

Massachusetts "Right To Know" List

The following ingredients are listed:

Methanol

Isopropyl Alcohol

Ethanol

Rhode Island "Right To Know" List

The following ingredients are listed:

Formaldehyde

Methanol

Isopropyl Alcohol

Ethanol

Minnesota "Right To Know" List

The following ingredients are listed:

Formaldehyde

Methanol

Isopropyl Alcohol

Ethanol

New Jersey "Right To Know" List

The following ingredients are listed:

Formaldehyde

Methanol

Isopropyl Alcohol

Ethanol

Pennsylvania "Right To Know" List

The following ingredients are listed:

Formaldehyde

Methanol

Isopropyl Alcohol

Ethanol

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Inventories

Canada - DSL/NDSL

DSL

US - TSCA

All the ingredients are listed or exempt.

16. Other information

Revision date	11/18/2022
Revision	5
Supersedes date	11/18/2022
SDS No.	DISINFECTANT-VC-SDSI05
Hazard statements in full	H225 Highly flammable liquid and vapor. H301 Toxic if swallowed. H311 Toxic in contact with skin. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H331 Toxic if inhaled. H350 May cause cancer. H370 Causes damage to organs .
NFPA - health hazard	Extremely hazardous, serious injury. (3)
NFPA - flammability hazard	Ignites easily. (3)
NFPA - instability hazard	Unstable if heated. (1)
NFPA - special hazard	N/A

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.