

Safety data sheet

Issue Date: 2022-10-09

Version:1.0

According to GB/T 16483、GB/T 17519

SDS Record Number: Synvent-001

Vinylene carbonate

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name: Vinylene carbonate

CAS No. : 872-36-6

1.2 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Synvent Materials Corporation

Address: 13-03C Block A,Hengfeng Building,No.335 Yingbin Road,Guangrao County

Dongying City,Shandong,China

Zip: 257300

Tel: 0546-2169970

Fax: 0546-2169970

E-mail: weipukonggu@synventgroup.com

1.3 Emergency telephone number

Tel: 0546-2169111

1.4 Relevant identified uses of the substance or mixture and uses advised against

Recommended uses: For R&D purposes only.

Uses advised against: Not for pharmaceutical, domestic or other purposes.

SECTION 2: Hazards identification

Emergency overview

Harmful if swallowed.Toxic in contact with skin.Causes skin irritation.May cause an allergic skin reaction.Causes serious eye damage.May cause damage to organs through prolonged or repeated exposure .Toxic to aquatic life with long lasting effects.If breathed in, move person into fresh air.If not breathing, give artificial respiration. Consult a physician.Wash off with soap and plenty of water. Consult a physician.Rinse cautiously with plenty of water for at least 15 minutes and consult a physician.Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

2.1 Classification of the substance or mixture

H227	Flammable liquids. Category 4
H302	Acute toxicity,oral. Category 4
H311	Acute toxicity,dermal. Category 3
H315	Skin corrosion/irritation. Category 2
H317	Sensitisation,skin. Category 1
H318	Serious eye damage/eye irritation. Category 1
H373	Specific target organ toxicity,repeated. Category 2
H401	Hazardous to the aquatic environment,acute hazard Category 2
H411	Hazardous to the aquatic environment,long-term hazard Category 2

Refer to Section 16 for the full text of the Health Instructions (H -) mentioned in this section.

2.2 GHS Label elements, including precautionary statements

Hazard pictograms:



Signal word

Warning

Hazard statements:

H227	Combustible liquid
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H373	May cause damage to organs <Liver,Stomach> through prolonged or repeated exposure if swallowed.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces.-No smoking
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash ... thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.

P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
Response	
P301+P312+P330	IF SWALLOWED: Call a POISON CENTER/doctor/... if you feel unwell.Rinse mouth.
P302+P352+P312	IF ON SKIN: Wash with plenty of water/ Call a POISON CENTER/doctor/.../if you feel unwell.
P305+P351+P338+P310	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 CENTER/doctor/...
P314	Get medical advice/attention if you feel unwell.
P333+P313	IF SKIN irritation or rash occurs: Get medical advice/attention.
P370+P378	In case of fire:Use dry sand, dry powder or alcohol resistant foam to extinguish the fire.
P391	Collect spillage.
Storage	
P403+P235	Store in a well-ventilated place.Keep cool.
P405	Store locked up.
Disposal	
P501	Disposal of contents / containers to approved waste treatment plants.

2.3 Physical and Chemical Hazards

H227 Combustible liquid

2.4 Health Hazards

H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H373 May cause damage to organs <Liver,Stomach> through prolonged or repeated exposure if swallowed.

2.5 Environmental Hazards

H401 Toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

2.6 Other Hazards

SECTION 3: Composition/information on ingredients**Substance/mixture: substance****3.1 Substance**Formula : $C_3H_2O_3$

Molecular weight : 86.05g/mol

CAS No. : 872-36-6

Composition	Concentration(or range)	Classification
1,3-dioxol-2-one	≤100%	H227 Flammable liquids. Category 4 H302 Acute toxicity,oral. Category 4 H315 Skin corrosion/irritation. Category 2 H318 Serious eye damage/eye irritation. Category 1 H373 Specific target organ toxicity,repeated. Category 2 H401 Hazardous to the aquatic environment,acute hazard Category 2 H411 Hazardous to the aquatic environment,long-term hazard Category 2
2,6-di-tert-butyl-p-cresol	≥1-<10%	H410 Hazardous to the aquatic environment,long-term hazard Category 1 M-Factor - Aquatic Acute: 1 M-Factor - Aquatic Chronic: 1

Refer to Section 16 for the full text of the Health Instructions (H -) mentioned in this section.

SECTION 4: First aid measures**4.1 Description of first aid measures****General description**

Consult a doctor. Show the safety technical manual to the doctor at the scene.

If Inhaled

If inhaled, please move the patient to fresh air. If breathing is stopped, artificial respiration is carried out.

Consult a doctor.

In case of skin contact

Immediately remove any clothing soiled by the product.Wash with water and soap and rinse thoroughly.If skin irritation continues, consult a doctor,

In case of eye contact

Rinse opened eye for at least 15 minutes under running water/saline. Consult a doctor.

If swallowed

Rinse mouth.Do not induce vomiting.Never give anything by mouth to an unconscious person. Rinse mouth

with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the label (see label 2.2).

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

4.4 Notes to Physician

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Extinguishing media: use water mist, foam, dry powder or carbon

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Special protective actions and precautions for firefighters

Wear full body protective clothing with breathing apparatus. Fire-extinguishing work is done from the windward.

Move containers from the fire site to the open space if safe to do.

If the container in the fire site has changed color or made a noise from the safety relief device, it must be evacuated immediately.

Isolate the accident site and prohibit irrelevant personnel from entering.

Collect and treat fire water to prevent environmental pollution.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Information about fire - and explosion protection

Keep away from sources of ignition. No smoking. Take measures to prevent the build up of electrostatic charge.

Hygienic measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Conditions for safe storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Storage stability

Recommended storage temperature 2-8°C

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Component	CAS No.	Value	Control parameters	Basis
2,6-di-tert-butyl-p-cresol	128-37-0	TWA	2mg/m3	USA. ACGIH (TLV)
	Remark	It cannot be classified as human carcinogen.		
		TWA	10mg/m3	USA.NIOSH(RELS)
		PEL	10mg/m3	Permissible Exposure Limits for Chemical Pollutants in California (Article 107, paragraph 8)

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Face/eye protection

Tightly fitting safety goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique

(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

a) Appearance and character	Liquid Colour: colourless
b) odour	Data not available
c) Odour threshold	Data not available
d) pH value	Data not available
e) Melting point/freezing point	19 - 22 °C
f) initial boiling point and boiling range	162 °C
g) Flash point	73 °C - closed cup
h) Evaporation rate	Data not available
i) Flammability (solid, gas)	Data not available
j) Combustible or explosive limits	Data not available
k) Vapour pressure	Data not available
l) Vapour density	Data not available
m) The density/relative density	Data not available
n) Water soluble	515 g/l at 20,2 °C - OECD Test Guideline 105 - soluble
o) Partition coefficient: n-octanol/water	log Pow: -0,36 at 20 °C
p) Auto-ignition temperature	355 °C at 1.007,3 - 1.013 hPa
q) Decomposition temperature	Data not available
r) Viscosity	Dynamic: Data not available

	Kinematic: Data not available
s) Explosive properties	Data not available
t) Oxidising properties	Data not available

9.2 Other information

Surface tension 73,4 mN/m at 19,9 °C

SECTION 10: Stability and reactivity

10.1 Chemical stability

Stable under recommended storage conditions.

Contains the following stabilizers: 2,6-di-tert-butyl-p-cresol (<2%)

10.2 Chemical reaction

Data not available

10.3 Conditions to avoid

Heat, flame and spark

10.4 Incompatible materials

Strong oxidant, strong acid, strong base, strong reducing agent

10.5 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

via oral route: LD50 Oral - Rat - male and female - > 300 - < 500 mg/kg

(Directive 67/548/EEC, Annex V, B.1)

via inhalation route: Data not available

via dermal route:

LD50 Dermal - Rat - male and female - > 200 - < 2.000 mg/kg

(Directive 67/548/EEC, Annex V, B.3.)

Skin corrosion/irritation

skin - Rabbit

Result: Skin irritation - 4 h

(OECD Test Guideline 404)

Serious eye damage/irritation

Eyes - Rabbit

Result: Risk of serious damage to eyes. - 24 h

(OECD Test Guideline 405)

Respiratory or skin sensitisation

- Mouse

Result: May cause sensitisation by skin contact.

Germ cell mutagenicity

Ames test

E.coli

Result: negative

Micronucleus test

Mouse - male

Result: negative

Carcinogenicity

Data not available

Reproductive toxicity

Data not available

Specific target organ toxicity - single exposure

Data not available

Specific target organ toxicity - repeated exposure

Ingestion - May cause damage to organs through prolonged or repeated exposure. - Liver, Stomach

Aspiration hazard

Data not available

11.2 Additional Information

RTECS: FG3325000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	mortality LC50 - Cyprinus carpio (Carp) - 2,4 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 4,9 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test EC50 - Pseudokirchneriella subcapitata (green algae) - 3,2 mg/l - 96 h (OECD Test Guideline 201)
Toxicity to bacteria	EC50 - Sludge Treatment - 100 mg/l - 3 h

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 28 d Result: 22 % - Not rapidly biodegradable (OECD Test Guideline 301D)
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12.3 Bioaccumulative potential

Data not available

12.4 Mobility in soil

Data not available

12.5 Results of PBT and vPvB assessment

PBT: Not applicable

vPvB: Not applicable

12.6 Other adverse effects

Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 2810

IMDG: 2810

IATA-DGR: 2810

14.2 UN proper shipping name

ADR/RID: TOXIC LIQUID, ORGANIC, N.O.S. (Vinylene carbonate)

IMDG: TOXIC LIQUID, ORGANIC, N.O.S. (Vinylene carbonate)

IATA: Toxic liquid, organic, n.o.s. (Vinylene carbonate)

14.3 Transport hazard class(es)

ADR/RID: 6.1

IMDG: 6.1

IATA-DGR: 6.1

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA-DGR: III

14.5 Environmental hazards

ADR/RID: yes IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

Please select appropriate transportation means and corresponding transportation and storage conditions according to the nature of chemicals. The means of transport shall be equipped with fire fighting materials of corresponding varieties and quantities and emergency treatment equipment for leakage. If road transportation is selected, please drive along the specified route.

14.7 Incompatible materials

Strong oxidant, strong acid, strong base, strong reducing agent

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Applicable regulations

Prevention and Control of Occupational Diseases Law**Other regulations**

Please note that waste disposal should also meet the requirements of local regulations.

SECTION 16: Other information**16.1 Full text of H-Statements referred to under sections 2 and 3.**

H227	Combustible liquid
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H373	May cause damage to organs <Liver,Stomach> through prolonged or repeated exposure if swallowed.
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

16.2 Compilation and revision information

This is version 1.0. This safety data sheet is in compliance with the following national standards: GB/T 16483-2008、GB/T 17519-2013、GB 30000.

16.3 References

- 【1】IPCS: (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- 【2】IARC, website: <http://www.iarc.fr/>
- 【3】eChemportal-The Global Portal to Information on Chemical Substances by OECD
website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- 【4】CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- 【5】ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- 【6】U.S.Environmental Protection Agency: Integrated hazard information system,
website: <http://cfpub.epa.gov/iris/>
- 【7】ERG-Emergency Response Guidebook by U.S. DoT,
website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- 【8】German GESTIS-database on hazardous Substance, website: <http://gestis-en.itrust.de/>

Abbreviations and acronyms

MAC: maximum allowable concentration. It refers to the concentration of toxic chemicals that should not be exceeded at any time in a working day at the working place.

PC-TWA: permissible concentration-time weighted average, It refers to the average allowable exposure concentration of 8 h working days and 40 h working weeks with time as the weight.

PC-STEL: permissible concentration-short term exposure limit, It refers to the concentration allowed to be exposed for a short time (15 min) on the premise of observing PC-TWA.