

SAFETY DATA SHEETS

According to the UN GHS revision 10

Version: 1.1
Creation Date: July 15, 2024
Revision Date: January 07, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name vinyl ether

1.2 Other means of identification

Product number C1052681

Other names vinyl ethyl dichloro silane; (ethoxy)ethylene; Aethyl-dichlor-vinyl-silan

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Flammable liquids, Category 2

Specific target organ toxicity – single exposure, Category 3

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 3

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour

H336 May cause drowsiness or dizziness

H412 Harmful to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

P370+P378 In case of fire: Use ... to extinguish.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P319 Get medical help if you feel unwell.

Storage	P403+P235 Store in a well-ventilated place. Keep cool. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
vinyl ether	Ethyl vinyl ether	109-92-2	203-718-4	≈ 99%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer immediately for medical attention.

4.2 Most important symptoms/effects, acute and delayed

INHALATION OR INGESTION: Excitement followed by unconsciousness and respiratory paralysis. CNS depression. EYES: May cause irritation and transient injury to cornea. SKIN: Prolonged contact can cause tissue defatting and dehydration leading to dermatitis. (USCG, 1999)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

no data available

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Excerpt from ERG Guide 127P [Flammable Liquids (Water-Miscible)]: CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient. CAUTION: For fire involving UN1170, UN1987 or UN3475, alcohol-resistant foam should be used. SMALL FIRE: Dry chemical, CO₂, water spray or alcohol-resistant foam. LARGE FIRE: Water spray, fog or alcohol-resistant foam. Do not use straight streams. Move containers from fire area if you can do it without risk. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. (ERG, 2016)

5.2 Specific hazards arising from the chemical

Behavior in Fire: Explosive hazard (USCG, 1999)

5.3 Special protective actions for fire-fighters

Use foam, dry powder, carbon dioxide, water. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Remove all ignition sources. Ventilation. Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT wash away into sewer. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Wash away remainder with plenty of water. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: self-contained breathing apparatus. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-

proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames, NO sparks and NO smoking. See Chemical Dangers. Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Do NOT use compressed air for filling, discharging, or handling. Use non-sparking handtools. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Fireproof. Separated from strong oxidants and acids. Cool. Keep under inert gas. Store only if stabilized.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Component	Ethyl vinyl ether			
CAS No.	109-92-2			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m ³	ppm	mg/m ³
Denmark	25 provisional			
	Remarks			

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles or eye protection in combination with breathing protection.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state

Vinyl ethyl ether is a clear colorless low-boiling liquid (35-36°C) with an ether-like odor. Flash point below -50°F. May polymerize exothermically if heated or contaminated. If polymerization takes place inside a container, the container may rupture violently. Less dense than water and slightly soluble in water. Hence floats on water. Vapors are heavier than air.

Colour

no data available

Odour

no data available

Melting point/freezing point

-115°C(lit.)

Boiling point or initial boiling point and boiling range

33°C(lit.)

Flammability

Highly flammable.

Lower and upper explosion limit/flammability limit

no data available

Flash point

-46°C

Auto-ignition temperature

395° F (USCG, 1999)

Decomposition temperature

no data available

pH

no data available

Kinematic viscosity

no data available

Solubility

in water: none

Partition coefficient n-octanol/water

1.04

Vapour pressure	581mmHg at 25°C
Density and/or relative density	0.753g/mL at 25°C (lit.)
Relative vapour density	(air = 1): 2.5
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

The substance can form explosive peroxides. The substance, as a liquid or vapour, can readily polymerize. Reacts violently with oxidants and acids. This generates fire and explosion hazard.

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

The vapour is heavier than air and may travel along the ground; distant ignition possible. As a result of flow, agitation, etc., electrostatic charges can be generated. VINYL ETHYL ETHER is a very dangerous fire and explosion hazard when exposed to heat or flame. Undergoes autooxidation with formation of peroxides in the air. Can react vigorously with oxidizing materials. Undergoes explosive polymerization in contact with methanesulfonic acid [Eaton, P. E. et al., J. Org. Chem., 1972, 37, p. 1947].

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Acute toxicity

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is mildly irritating to the eyes and respiratory tract. The substance may cause effects on the central nervous system. This may result in unconsciousness and narcosis. If swallowed the substance may cause vomiting and could result in aspiration pneumonitis.

STOT-repeated exposure

The substance defats the skin, which may cause dryness or cracking. Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the liver and kidneys. This may result in organ disturbances.

Aspiration hazard

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available

- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN1302 (For reference only, please check.) IMDG: UN1302 (For reference only, please check.) IATA: UN1302 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: VINYL ETHYL ETHER, STABILIZED (For reference only, please check.) IMDG: VINYL ETHYL ETHER, STABILIZED (For reference only, please check.) IATA: VINYL ETHYL ETHER, STABILIZED (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.) IMDG: 3 (For reference only, please check.) IATA: 3 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.) IMDG: I (For reference only, please check.) IATA: I (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Ethyl vinyl ether	Ethyl vinyl ether	109-92-2	203-718-4
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2024
Revision Date	January 07, 2025

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

An added stabilizer or inhibitor can influence the toxicological properties of this substance; consult an expert. Check for peroxides prior to distillation; eliminate if found.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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