

Ethyl Vinyl Ether

Safety Data Sheet

Supersedes: 17/02/2024

Revision: 1.4

Revision date: 14/06/2024

SECTION 1: Identification

1.1 Identification

Product form	:	Substance
Substance name	:	Ethyl Vinyl Ether
CAS No	:	109-92-2
EC/ List No	:	203-718-4
Formula	:	C ₄ H ₈ O
Molecular weight	:	72.1062 g/mol

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

Use of the substance/mixture	:	Manufacturing of substances.
Relevant identified uses	:	As intermediate in agrochemicals, F&F etc.

1.3 Details of the supplier of the safety data sheet

Godavari Biorefineries Ltd.
45/47, Somaiya bhavan,
Mahatma Gandhi Road,
Fort, Mumbai -400001, INDIA.
T 0091 22 22048272
Email: alka@somaiya.com
www.somaiya.com

1.4 Emergency telephone Number

Emergency number	:	0091 2423 279308 0091 22 22048272 (Monday – Friday - 09.30 hrs to 18.00 hrs)
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SECTION 2: Hazard(s) identification

GHS classification

2.1 Classification of the substance or mixture

Flammable liquids Category 2	:	H225 Highly flammable liquid and vapour
Specific target organ toxicity - single exposure Category 3	:	Central nervous system H336 May cause drowsiness and dizziness.

2.2: GHS labeling

Hazard pictograms (GHS)



GHS02



GHS07

Signal word (GHS)

: Danger

Hazard statements (GHS)

: H225-Highly flammable liquid and vapour
H336-May cause drowsiness and dizziness

Precautionary statements (GHS)

: P210 -Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 -Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

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Precautionary statements (GHS)

- : P403+P233 -Store in a well-ventilated place. Keep container tightly closed.
- P501- Dispose of contents/container to hazardous waste in accordance with local/regional/national/international regulations.
- P405 - Store locked up
- P411 - Store at temperatures below $\leq 25^{\circ} \text{C}$
- P422 - Store under Nitrogen blanketing or inert gas blanketing is must & store with stabilizer.

2.3 Other hazards

: None.

Other hazards not contributing to the classification

2.4 Unknown acute toxicity (GHS US)

Not applicable.

SECTION 3: Composition/Information on ingredients

3.1 Substance

Substance type	Mono-constituent		
Name	Product Identifier CAS No EC No Index No	Concentration %	GHS Classification
Ethyl Vinyl Ether (Main constituent)	109-92-2 203-718-4	≥ 98.5	Flam. Liq. 2, H225; STOT SE 3, H336

Full text of hazard classes and H-statements: see section 16

3.2 Mixture

Not applicable.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General information : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital
- Inhalation : After inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Call a physician. Get medical attention immediately. Keep patient calm
- Skin contact : Wash immediately with lots of water (15 minutes)/shower. Do not apply (chemical) neutralizing agents. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage.
- Eye contact : Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist. Remove contact lenses. Protect unharmed eye.
- Ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not give activated charcoal. Immediately consult a doctor/medical service. Ingestion of large quantities: immediately to hospital. Do not give chemical antidote. Doctor: gastric lavage is not recommended

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4.2 Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	:	Irritation of the respiratory system. Vapours may cause headache, fatigue, dizziness and nausea. In higher concentrations, central nervous system depression and coma.
Symptoms/injuries after skin contact	:	No further relevant information available.
Symptoms/injuries after eye contact	:	No further relevant information available.
Symptoms/injuries after ingestion	:	No further relevant information available.
Chronic symptoms On continuous / repeated exposure	:	Dermatitis,, central nervous system depression and coma

4.3 Indication of any immediate medical attention and special treatment needed

Seek medical assistance.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray. Polyvalent foam. Alcohol-resistant foam. Carbon dioxide.
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire

5.2 Special hazards arising from the substance or mixture

Flammable liquid and vapour	:	DIRECT FIRE HAZARD. Flammable. Gas/vapor flammable with air within explosion limits. INDIRECT FIRE HAZARD. May be ignited by sparks
Explosion Hazard	:	DIRECT EXPLOSION HAZARD. Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. may be ignited by sparks
Hazardous combustion products	:	No data available
Reactivity	:	On heating: release of corrosive/combustible gases/ vapours. Upon combustion: CO and CO ₂ are formed. Violent to explosive reaction with many compounds e.g.: with (strong) oxidizers:

5.3 Advice for firefighters

Firefighting instructions	:	Cool tanks/drums with water spray/remove them into safety location. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	:	Do not enter fire area without proper protective equipment, including respiratory protection.

5.4 Additional information

No Data Available.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Protective equipment	:	Gas-tight chemical suit. Corrosion-proof suit. Refer "Material-Handling" to select protective clothing.
Emergency procedures	:	Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop nearby engines and no smoking. No naked flames or sparks. Use Spark- and explosion-proof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes.

For emergency responders

Protective equipment	:	Equip cleanup crew with proper protection.
Emergency procedures	:	Stop leak if safe to do so. Ventilate area.

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6.2 Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers, water bodies.

6.3 Methods and material for containment and cleaning up

- For containment : Contain released substance, transfer (pump) into suitable containers. Use compatible material of containers. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute combustible/toxic gases/vapours with water spray. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills
- Methods for cleaning up : Take up liquid spill into inert absorbent material, e.g.: sand, earth, vermiculite, powdered limestone. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/ authorized disposal facility. Wash clothing and equipment after handling.

6.4 Reference to other sections No

additional information available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep the substance free from contamination. Use corrosion proof equipment. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark-/explosionproof appliances and lighting system.
Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Keep container tightly closed.
Measure the concentration in the air regularly. Work under local exhaust/ventilation. Exhaust gas must be neutralised.
- Hygiene measures : Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

- Storage temperature : Recommended Storage temperature is below $\leq 25^{\circ}\text{C}$ with Nitrogen blanketing or inert gas blanketing is must & store with stabilizer.
- Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
- Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: combustible materials. oxidizing agents. (strong) bases. metals. alcohols. amines. water/moisture.
- Storage area : Store in a dry area. Ventilation at floor level. Keep out of direct sunlight. Fireproof storeroom. Keep locked up. Meet the legal requirements. Keep away from acid.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : MATERIAL TO AVOID: oxidizing agents.

7.3 Specific end uses


Part from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with limit values that require monitoring at the workplace: Not required
Additional information: The lists that were valid during the creation were used as basis.

8.2 Exposure controls

- | | | |
|-----------------------------------|---|---|
| Appropriate engineering controls | : | Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Material should be handled safely. |
| Personal protective equipment | : |  <p style="text-align: center;">Protective goggles. Gloves. Protective clothing. Face shield. Gas mask with filter.</p> |
| Materials for protective clothing | : | GIVE EXCELLENT RESISTANCE: butyl rubber. polyethylene/ethylene vinyl alcohol. viton. GIVE GOOD RESISTANCE: neoprene. GIVE LESS RESISTANCE: natural rubber. PVC. GIVE POOR RESISTANCE: polyethylene. PVA. |
| Hand protection | : | Chemical resistant protective gloves (EN 374)

Suitable materials short-term contact and/or splashes (recommended: At least protective index 2, corresponding > 30 minutes of permeation time according to EN 374) e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other Manufacturer's directions for use should be observed because of great diversity of types. Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. |
| Eye protection | : | Safety glasses. Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). |
| Skin and body protection | : | Head/neck protection. Corrosion-proof clothing. |
| Respiratory protection | : | Wear respiratory protection if ventilation is inadequate. |
| Thermal hazard protection | : | None. |

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | | |
|-------------------------------------|---|------------------------------------|
| Physical state | : | Liquid |
| Appearance | : | Liquid |
| Colour | : | Colorless to Pale Yellow liquid. |
| Odour | : | Ether-like |
| pH | : | No Data Available |
| Melting point | : | -115 °C (-175 °F) |
| Freezing point | : | No Data Available |
| Initial boiling point/boiling range | : | 36.2 °C (97.2 °F) |
| Flash Point | : | < -46 °C (< -50.8 °F) (Closed cup) |
| Relative evaporation rate | : | No Data Available |
| Relative density | : | 0.759 g/Cm3 at 20 °C |

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Molecular mass	:	72.1062 g/mole
Flammability(Solid, Gas)	:	Highly flammable upon ignition.
Solubility	:	7.8 g/l Soluble in water, acetone
Vapor pressure	:	554 hPa (415.5 mm Hg)
Vapour density	:	2.49 (Air = 1)
Evaporation Rate	:	No Data Available
Partition coefficient n-octanol/water	:	1.63(log Pow) (Experimental value; 25 °C, n-octanol -water)
Auto-ignition temperature	:	202 °C (395.6 °F) (at 1013.25 hPa)
Decomposition temperature	:	No Data Available
Viscosity	:	0.2 mPas(dynamic)
Oxidizing properties	:	Non oxidizing(not fire –propagating)

9.2 Other information

Surface Tension	:	19 mN/m
Other properties	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity	:	On heating: release of Toxic/combustible gases/vapours . Upon combustion: CO and CO ₂ are formed. Violent to explosive reaction with many compounds e.g.: with (strong) oxidizers: (increased) risk of fire/explosion. Reacts violently with (some) bases. Reacts with (some) metals: release of highly flammable gases/vapours (hydrogen).
10.2 Chemical Stability	:	The product is stable if stored and handled as prescribed/indicated. The product is stabilized against spontaneous polymerization prior to despatch. Peroxides: The product/the substance has a tendency towards the formation of peroxide.
10.3 Possibility of hazardous reactions	:	Reacts violently with (some) bases: release of heat.
10.4 Conditions to avoid	:	Extremely high or low temperatures. Incompatible materials.
10.5 Incompatible materials	:	Peroxides, radical formers, substances with an acid reaction, atmospheric oxygen.
10.6 Hazardous decomposition products	:	Carbon dioxide. Carbon monoxide.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Likely routes of exposure	:	Inhalation; Skin and eye contact
Acute toxicity	:	Not classified

Ethyl vinyl ether(109-92-2)

LD50 oral toxicity	:	6150 mg/kg bw (rat(Wistar)male) (Acute Toxicity: oral)
LD50 dermal toxicity	:	> 15080 mg/kg bw (rabbit (New Zealand White)) (Acute Toxicity: dermal)
LC50 inhalation toxicity	:	324000mg/m ³ (mouse) (Acute toxicity: inhalation)

Skin corrosion/irritation	:	Not classified .
Serious eye damage/irritation	:	Not classified

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Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	May cause drowsiness or dizziness
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified

SECTION 12: Ecological information

12.1 Toxicity

Ecology - general	:	Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air	:	Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology – water	:	Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

Ethyl vinyl ether(109-92-2)			
	Toxicity to Fish	Toxicity to aquatic algae and cyanobacteria	Short-term toxicity to aquatic invertebrates
Species	Danio rerio	Desmodesmus subspicatus	Daphnia magna
Value	28.3 mg/l	45.9 mg/L	52 mg/l
Exposure time	96 h	72 h	48 hrs

12.2 Persistence and degradability

Ethyl vinyl ether(109-92-2)

Persistence and degradability	:	Readily biodegradable in water.
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12.3 Bioaccumulative potential

Bio-accumulative potential	:	Non-Bioaccumulation.
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12.4 Mobility in soil

Ecology – soil	:	The calculation using KOCWIN v2.00 predicts a log Koc of 0.99 and KOC of 9.7
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12.5 Other adverse effects

No additional information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations	:	Remove and dispose waste in accordance with local and/or national regulations Recommended practice of distillation, physico-chemical/biological treatment and authorized waste incinerator for solvents with energy recovery. Do not discharge into drains or the environment.
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SECTION 14 : TRANSPORT INFORMATION

Marine transport (IMDG)

UN number	:	UN 1302
Proper shipping name and description	:	Vinyl ethyl ether, stabilized
Class	:	3

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Packaging group : I
 Hazard Identification Number : 33
 EmS code : F-E, S-D
 Marine pollutant : No

Air transport ICAO/IATA

UN number : UN 1302
 Proper shipping name and description : Vinyl ethyl ether, stabilized
 Class : 3
 Packaging group : I
 Hazard Labels : Flammable liquid
 Environmentally hazardous : No

Department of Transportation (DOT)

UN Number : UN1302
 Proper Shipping Name : Vinyl ethyl ether, stabilized
 Transport hazard class : 3
 Packing group : I
 Limited Quantity (RQ) : 1L
 Poison Inhalation Hazard : No



Hazard labels :
 3 - Flammable liquid

SECTION 15: Regulatory information

15.1 National regulations

Ethyl Vinyl Ether (109-92-9)

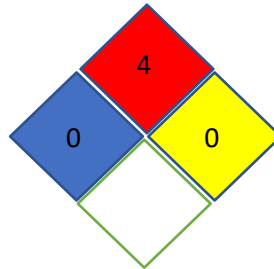
Country	National Inventories	Listing
AUSTRALIA	AICS	Listed
CANADA	DSL	Listed
CHINA	IECSC	Listed
EUROPE	EC	Listed
JAPAN	ENCS	Listed
NEW ZEALAND	NZIoC	Listed
PHILIPPINES	PICCS	Listed
SOUTH KOREA	KECI	Listed
TAIWAN	TCSI	Listed
USA	TSCA	Listed

SECTION 16: Other information

16.1 Hazard Statement

H225 : Flammable liquid and vapor
 H336 : May cause drowsiness or dizziness.

16.2 NFPA Rating



16.3 Abbreviations and acronyms

PBT =Persistent Bioaccumulative and Toxic
 vPvB= Very Persistent and Very Bioaccumulative SCBA= Self Contained Breathing Apparatus
 NIOSH REL= National Institute for Occupational Safety and Health
 Recommended Exposure Limit
 OSHA PEL=Occupational Safety and Health Administration Permissible
 Exposure Limit
 OELTWA= Occupational Exposure Limit Time Weighted Averages
 IDLH= Immediately Dangerous to Life or Health
 UEL= Upper Explosive Limit
 LEL= Lower Explosive Limit
 RTECS= Registry of Toxic Effects of Chemical Substances
 NTP=National Toxicology Programm
 IARC= International Agency for Research on Cancer
 EPA=Environmental Protection Agency TSCA= Toxic Substances Control Act NFPA=
 National Fire Protection Association CSR=Chemical Safety Report
 BCF = Bio Concentration Factor
 DNEL = Derived No Effect Level
 PNEC = Predicted No Effect Concentration
 TLV = Threshold Limit Value
 ACGIH = American Conference of Governmental Industrial Hygienist REACH = Registration, Evaluation
 .Authorisation and Restriction of Chemicals
 CLP = Classification, Labelling and Packaging
 LD / LC = Lethal Doses / Lethal Concentration
 GHS = Globally Harmonised System
 ADR = Accord europeen relative au transport international de marchandises
 IMDG-Code = International Maritime Code for Dangerous Goods
 EmS = Emergency measures on Sea
 ICAO = International Civil Aviation Organization
 IATA/DGR= International Air Transport Association/Dangerous Goods
 Regulation

16.4 Further information:

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