

SAFETY DATA SHEET

Creation Date 03-Dec-2010

Revision Date 23-May-2017

Revision Number 3

1. Identification

Product Name Ethyl vinyl ether, stabilized

Cat No. : AC119080000; AC119080010; AC119080025; AC119082500

Synonyms Ethoxy ethene; Vinyl ethyl ether

Recommended Use Laboratory chemicals.

Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11

Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99

CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|--|------------|
| Flammable liquids | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Central nervous system (CNS). | |

Label Elements

Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor

May cause drowsiness or dizziness



Precautionary Statements

Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Wear protective gloves/protective clothing/eye protection/face protection
Keep cool

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage

Store in a well-ventilated place. Keep container tightly closed
Store locked up

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Harmful to aquatic life with long lasting effects
May form explosive peroxides

3. Composition / information on ingredients

| Component | CAS-No | Weight % |
|---------------------|-----------|----------|
| Vinyl ethyl ether | 109-92-2 | 100 |
| Potassium hydroxide | 1310-58-3 | 0.1 |

4. First-aid measures

| | |
|--|--|
| General Advice | If symptoms persist, call a physician. |
| Eye Contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention. |
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. |
| Inhalation | Move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur. |
| Ingestion | Clean mouth with water and drink afterwards plenty of water. |
| Most important symptoms/effects | None reasonably foreseeable. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Causes central nervous system depression |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

| | |
|---------------------------------------|--|
| Suitable Extinguishing Media | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
| Unsuitable Extinguishing Media | No information available |

| | |
|---|--------------------------|
| Flash Point | -45 °C / -49 °F |
| Method - | No information available |
| Autoignition Temperature | 180 °C / 356 °F |
| Explosion Limits | |
| Upper | 12% |
| Lower | 1.3% |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

Hazardous Combustion Products

Carbon monoxide (CO) Carbon dioxide (CO₂)

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.

NFPA

Health
2

Flammability
4

Instability
2

Physical hazards
N/A

6. Accidental release measures

| | |
|----------------------------------|---|
| Personal Precautions | Use personal protective equipment. Ensure adequate ventilation. |
| Environmental Precautions | Should not be released into the environment. |

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

| | |
|-----------------|--|
| Handling | Wear personal protective equipment. Ensure adequate ventilation. Avoid ingestion and inhalation. Do not get in eyes, on skin, or on clothing. |
| Storage | Keep away from heat and sources of ignition. Keep container tightly closed. Keep in a dry, cool and well-ventilated place. Refrigerator/flammables. Flammables area. Keep container tightly closed in a dry and well-ventilated place. Keep away from direct sunlight. |

8. Exposure controls / personal protection

Exposure Guidelines

| Component | ACGIH TLV | OSHA PEL | NIOSH IDLH | Mexico OEL (TWA) |
|---------------------|------------------------------|--|------------------------------|------------------|
| Potassium hydroxide | Ceiling: 2 mg/m ³ | (Vacated) Ceiling: 2 mg/m ³ | Ceiling: 2 mg/m ³ | |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

| | |
|-----------------------------|--|
| Engineering Measures | Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. |
|-----------------------------|--|

Personal Protective Equipment

| | |
|---------------------------------|---|
| Eye/face Protection | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. |
| Skin and body protection | Long sleeved clothing. |
| Respiratory Protection | No protective equipment is needed under normal use conditions. |
| Hygiene Measures | Handle in accordance with good industrial hygiene and safety practice. |

9. Physical and chemical properties

| | |
|---|---------------------------------|
| Physical State | Liquid |
| Appearance | Colorless |
| Odor | Petroleum distillates |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | -116 °C / -176.8 °F |
| Boiling Point/Range | 36 °C / 96.8 °F @ 760 mmHg |
| Flash Point | -45 °C / -49 °F |
| Evaporation Rate | No information available |
| Flammability (solid,gas) | Not applicable |
| Flammability or explosive limits | |
| Upper | 12% |
| Lower | 1.3% |
| Vapor Pressure | 560 mbar @ 20 °C |
| Vapor Density | No information available |
| Specific Gravity | 0.750 |
| Solubility | moderately soluble |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | 180 °C / 356 °F |
| Decomposition Temperature | 280 °C |
| Viscosity | 0.28 mPa s at 5 °C |
| Molecular Formula | C ₄ H ₈ O |
| Molecular Weight | 72.11 |

10. Stability and reactivity

| | |
|---|---|
| Reactive Hazard | Yes |
| Stability | Air sensitive. |
| Conditions to Avoid | Keep away from open flames, hot surfaces and sources of ignition. Exposure to air. Incompatible products. |
| Incompatible Materials | Acids, Strong oxidizing agents, oxygen, Peroxides |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO ₂) |
| Hazardous Polymerization | Hazardous polymerization may occur. |
| Hazardous Reactions | May form explosive peroxides. |

11. Toxicological information**Acute Toxicity**

Product Information
Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------------|---------------------------|--|------------------------------|
| Vinyl ethyl ether | LD50 = 8160 µL/kg (Rat) | LD50 > 20 g/kg (Rat) LD50 > 20 mL/kg (Rabbit) | LC50 > 21.2 mg/L (Rat) 4 h |
| Potassium hydroxide | LD50 = 284 mg/kg (Rat) | Not listed | Not listed |

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes, respiratory system and skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|---------------------|-----------|------------|------------|------------|------------|------------|
| Vinyl ethyl ether | 109-92-2 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Potassium hydroxide | 1310-58-3 | Not listed | Not listed | Not listed | Not listed | Not listed |

Mutagenic Effects Not mutagenic in AMES Test

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Central nervous system (CNS)

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Causes central nervous system depression

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Do not empty into drains. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|---------------------|--|--|-----------------------|---|
| Vinyl ethyl ether | EC50: = 510 mg/L, 72h (Desmodesmus subspicatus) | LC50: 2200 - 4600 mg/L, 96h static (Leuciscus idus) | EC50 > 5000 mg/L 17 h | EC50: > 100 mg/L, 24h (Daphnia magna Straus) |
| Potassium hydroxide | Not listed | LC50: = 80 mg/L, 96h static (Gambusia affinis) | Not listed | Not listed |

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

| Component | log Pow |
|---------------------|---------|
| Vinyl ethyl ether | 1.63 |
| Potassium hydroxide | 0.83 |

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN1302
 Proper Shipping Name VINYL ETHYL ETHER, STABILIZED
 Hazard Class 3
 Packing Group I

TDG

UN-No UN1302
 Proper Shipping Name VINYL ETHYL ETHER, STABILIZED
 Hazard Class 3
 Packing Group I

IATA

UN-No UN1302
 Proper Shipping Name VINYL ETHYL ETHER, STABILIZED
 Hazard Class 3
 Packing Group I

IMDG/IMO

UN-No UN1302
 Proper Shipping Name VINYL ETHYL ETHER, STABILIZED
 Hazard Class 3
 Packing Group I

15. Regulatory information

All of the components in the product are on the following Inventory lists: Australia Complete Regulatory Information contained in following SDS's X = listed China Canada The product is classified and labeled according to EC directives or corresponding national laws The product is classified and labeled in accordance with Directive 1999/45/EC Europe TSCA Korea Philippines Japan U.S.A. (TSCA) Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) Korea (ECL) China (IECSC) Japan (ENCS) Philippines (PICCS)

International Inventories

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|---------------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Vinyl ethyl ether | X | X | - | 203-718-4 | - | | X | X | X | X | X |
| Potassium hydroxide | X | X | - | 215-181-3 | - | | X | X | X | X | X |

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b)

Not applicable

SARA 313 Not applicable

SARA 311/312 Hazard Categories

| | |
|-----------------------------------|-----|
| Acute Health Hazard | Yes |
| Chronic Health Hazard | No |
| Fire Hazard | Yes |
| Sudden Release of Pressure Hazard | No |
| Reactive Hazard | Yes |

CWA (Clean Water Act)

| Component | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|---------------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Potassium hydroxide | X | 1000 lb | - | - |

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component | Hazardous Substances RQs | CERCLA EHS RQs |
|---------------------|--------------------------|----------------|
| Potassium hydroxide | 1000 lb | - |

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------------|---------------|------------|--------------|----------|--------------|
| Vinyl ethyl ether | X | X | X | - | - |
| Potassium hydroxide | X | X | X | - | X |

U.S. Department of Transportation

| | |
|-----------------------------|---|
| Reportable Quantity (RQ): | N |
| DOT Marine Pollutant | N |
| DOT Severe Marine Pollutant | N |

U.S. Department of Homeland Security

This product contains the following DHS chemicals:

| Component | DHS Chemical Facility Anti-Terrorism Standard |
|-------------------|---|
| Vinyl ethyl ether | 7500 lb STQ |

Other International Regulations

Mexico - Grade No information available

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

| | |
|-------------------------|---|
| Creation Date | 03-Dec-2010 |
| Revision Date | 23-May-2017 |
| Print Date | 23-May-2017 |
| Revision Summary | This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). |

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text

End of SDS