


SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1 Product identifier**
- Product Name: 2-ethoxy-2-methylpropane / ETHYL TERT-BUTYL ETHER
- Product Description: V4020a- ETBE-2-ethoxy-2-methylpropane / ETHYL TERT-BUTYL ETHER
- Trade name: ETBE
- Product Code: ETBE
- CAS No.: 637-92-3
- EC No.: 211-309-7
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
- Identified use(s): Fuel for engines.
Blend component.
- 1.3 Details of the supplier of the safety data sheet**
- Company Identification: Vitol SA
Boulevard du Pont d'Arve 28
P.O. Box 384
1211 Geneva 4
Switzerland
- Telephone: +31 10 498 7200
- Fax: +31 10 452 9545
- E-Mail (competent person): xreach@vitol.com
- 1.4 Emergency telephone number**
- Emergency Phone No. (24 h): +44 (0) 1235 239 670 (24 hours, 7 days)

2. HAZARDS IDENTIFICATION

- 2.1 Classification of the substance or mixture** According to Regulation (EC) No. 1272/2008 (CLP)
- Flam. Liq. 2; H225
STOT SE 3; H336
- According to Directive 67/548/EEC & Directive 1999/45/EC
- F; R11
R67
- 2.2.1 Label elements** According to Regulation (EC) No. 1272/2008 (CLP)
- Hazard pictogram(s): 
- Signal word(s): Danger
- Hazard statement(s): H225: Highly flammable liquid and vapour.
H336: May cause drowsiness or dizziness.
- Precautionary statement(s): P210: Keep away from heat, sparks, open flame, hot surfaces -

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No smoking.
 P243: Take precautionary measures against static discharge.
 P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
 P271: Use only outdoors or in a well-ventilated area.
 P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P403 + P235: Store in a well-ventilated place. Keep cool.

2.2.2 Label elements

Hazard pictogram(s):



Hazard Symbol:

Highly flammable.

Risk Phrases:

R11: Highly flammable.

R67: Vapours may cause drowsiness and dizziness.

Safety Phrases:

S9: Keep container in a well-ventilated place.

S16: Keep away from sources of ignition - No smoking.

S33: Take precautionary measures against static discharges.

2.3 Other hazards

Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces. May cause irritation to eyes, skin and air passages.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

EC Classification No. 1272/2008

Hazardous ingredient(s)	%W/W	CAS No.	EC No.	Hazard symbol(s) and hazard statement(s)
2-ethoxy-2-methylpropane	100	637-92-3	211-309-7	Flam. Liq. 2; H225 STOT SE 3; H336

EC Classification No. 67/548/EC

Hazardous ingredient(s)	%W/W	CAS No.	EC No.	Risk Phrases and Safety Phrases
2-ethoxy-2-methylpropane	100	637-92-3	211-309-7	F; R11 R67

4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation:

Remove patient from exposure, keep warm and at rest. If symptoms persist, obtain medical attention.

Skin Contact:

Remove contaminated clothing immediately and drench affected skin with plenty of water, then wash with soap and water. Contaminated clothing should be thoroughly cleaned. If symptoms persist, obtain medical attention.

Eye Contact:

If substance has got into the eyes, immediately wash out with plenty of water for at least 15 minutes. If symptoms persist, obtain medical attention.

Ingestion:

Do not induce vomiting. Provided the patient is conscious, wash out mouth with water and give 200-300 ml (half a pint) of water to drink. If symptoms persist, obtain medical attention.

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- 4.2 Most important symptoms and effects, both acute and delayed** May cause irritation to eyes, skin and air passages. Vapours may cause drowsiness and dizziness.
- 4.3 Indication of the immediate medical attention and special treatment needed** If breathing is laboured, oxygen should be administered by qualified personnel. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

5. FIRE-FIGHTING MEASURES

- 5.1 Extinguishing media**
Suitable Extinguishing Media: Foam, CO₂ or dry powder.
For large fire use: Water.
Unsuitable Extinguishing Media: Do not use water jet.
- 5.2 Special hazards arising from the substance or mixture**
Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces.

May give off toxic fumes in a fire. Carbon monoxide, Carbon dioxide.
- 5.3 Advice for fire-fighters**

A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions. Keep fire exposed containers cool by spraying with water.

Flash Point (°C): -19
Flammable Limits (Lower) (%v/v): 1.23
Flammable Limits (Upper) (%v/v): 7.7
Auto Ignition Temperature (°C): 375

6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures** Eliminate sources of ignition. Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces. Ensure adequate ventilation. Use non-sparking hand tools and explosion proof electrical equipment. Take precautionary measures against static discharges.




Avoid inhalation of vapours. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves. (See Section: 8). Contaminated clothing should be thoroughly cleaned.
- 6.2 Environmental precautions**
Do not allow to enter drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.
- 6.3 Methods and material for containment and cleaning up**
Adsorb spillages onto sand, earth or any suitable adsorbent material. Sweep up carefully with non-sparking tools. Transfer to a container for disposal. Wash spill area with soapy water. Contaminated adsorbent must be removed in sealed, plastic lined drums and disposed of via an authorised waste disposal contractor.
- 6.4 Reference to other sections**
Personal Protection: See Section: 8.
- Other advice**
Caution - spillages may be slippery.

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7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling**
- Eliminate sources of ignition. Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces. Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit is not exceeded. Use non-sparking hand tools and explosion proof electrical equipment. Take precautionary measures against static discharges.
- Avoid inhalation of vapours. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves. (See Section: 8).
- Do not eat, drink or smoke at the work place. Wash hands and exposed skin after use. Contaminated clothing should be thoroughly cleaned.
- 7.2 Conditions for safe storage, including any incompatibilities**
- Keep away from heat and sources of ignition. Keep from direct sunlight. Keep only in the original container in a cool, well-ventilated place. Keep/store away from: Oxidising agents.
- 7.3 Specific end use(s)**
- Industrial use only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 Control parameters**
- Spain : 5 ppm ; 21 mg/m³ (VLA-ED)
- 8.2 Exposure controls**
- 8.2.1 Appropriate engineering controls**
- Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit is not exceeded.
- 8.2.2 Personal Protection**
- Eye/face protection
-  Goggles giving complete protection to eyes. (EN 166)
- Skin protection
-  Protective gloves. (EN 374)
- Respiratory protection
-  In case of insufficient ventilation, wear suitable respiratory equipment. (BS EN 14387:2004+A1)
- Other:
- Apron or other light protective clothing, boots and plastic or rubber gloves.
- 8.2.3 Environmental Exposure Controls**
- Avoid release to the environment.

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9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	Liquid.
Colour:	Colourless.
Boiling Point (°C):	70
Melting Point (°C):	-94
Flash Point (°C):	-19
Flammable Limits (Lower) (%v/v):	1.23
Flammable Limits (Upper) (%v/v):	7.7
Vapour Pressure (Pascal):	12,800 (@ 20°C)
Specific Gravity:	0.75 (@ 20°C)
Solubility (Water):	1.2g/100g
Partition Coefficient: (n-Octanol/water)	log Pow: 1.28
Auto Ignition Temperature (°C):	375
Explosive Properties:	Vapour may create explosive atmosphere.
Oxidising Properties:	Not oxidising.

9.2 Other information No information available.

10. STABILITY AND REACTIVITY

10.1 Reactivity	No information available.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	No information available.
10.4 Conditions to avoid	Keep away from heat, sources of ignition and direct sunlight.
10.5 Incompatible materials	Oxidising agents.
10.6 Hazardous Decomposition Product(s)	May give off toxic fumes in a fire. Carbon monoxide, Carbon dioxide.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:	
Ingestion:	LD ₅₀ (oral/rat): > 2000 mg/kg
Inhalation:	LC ₅₀ (inhalation/rat): > 5,880 mg/m ³ /4h
Skin Contact:	LDL ₀ (dermal/rabbit): > 20 mg/kg
Eye Contact:	No information available.
Skin corrosion/irritation	Repeated and/or prolonged skin contact may cause irritation.
Serious eye damage/irritation:	May cause eye irritation.
Respiratory or skin sensitization:	Negative.
Mutagenicity:	There is no evidence of mutagenic potential.
Carcinogenicity:	No evidence of carcinogenicity.
Reproductive toxicity:	Negative.
STOT-single exposure:	May cause drowsiness and dizziness.
STOT-repeated exposure:	Negative.
Aspiration hazard:	Negative.
Other information:	No information available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity	LC ₅₀ (Fish): > 100 mg/l/96h WGK: 1.
12.2 Persistence and degradability	May evaporate quickly.
12.3 Bioaccumulative potential	The product has low potential for bioaccumulation.
12.4 Mobility in soil	The product has low mobility in soil.
12.5 Results of PBT and vPvB assessment	No information available.
12.6 Other adverse effects	No information available.

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13. DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods** Do not empty into drains; dispose of this material and its container in a safe way. To be disposed of as hazardous waste. Disposal should be in accordance with local, state or national legislation.

14. TRANSPORT INFORMATION

- 14.1 UN number** 1179
14.2 Proper Shipping Name ETHYL BUTYL ETHER
14.3 Transport hazard class(es) 3
14.4 Packing Group II
14.5 Environmental hazards Not classified as a Marine Pollutant.
14.6 Special precautions for user Vapour may create explosive atmosphere. The vapour is heavier than air; beware of pits and confined spaces.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code -

15. REGULATORY INFORMATION

According to Regulation (EC) No. 1272/2008 (CLP)

Hazard pictogram(s):



Signal word(s):

Danger

Hazard statement(s):

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

Precautionary statement(s):

P210: Keep away from heat, sparks, open flame, hot surfaces - No smoking.
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 P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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According to Directive 67/548/EEC & Directive 1999/45/EC

Hazard pictogram(s):



Hazard Symbol:

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Risk Phrases:

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Safety Phrases:

S9: Keep container in a well-ventilated place.
 S16: Keep away from sources of ignition - No smoking.
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16. OTHER INFORMATION

Full text of Hazard statements and Risk phrases for pure substances listed in section 3.

Hazard Symbol: H225: Highly flammable liquid and vapour.
H336: May cause drowsiness or dizziness.

Risk Phrases: R11: Highly flammable.
R67: Vapours may cause drowsiness and dizziness.

The following sections contain revisions or new statements: 1-16.

Abbreviations:

CAS = Chemical Abstracts Service;
CNS = Central Nervous System;
EINECS = European Inventory of Existing Commercial Chemical Substances;
EC50 = Effective Concentration 50%;
IARC = International Agency for Research on Cancer;
IC50 = Inhibitory Concentration 50%;
LC50 = Lethal Concentration 50%;
LD50 = Lethal Dose 50%;
LTEL = Long Term Exposure Limit;
STEL = Short Term Exposure Limit;
TWA = Time Weighted Average;
EH40 = UK Occupational Exposure Limits
VLA-ED = Exposure limit value- Daily exposure (Valor Límite Ambiental-Exposición Diaria)
VLB = Biological Limit Values (Valores Límite Biológicos)
VLI= Indicative limit values

References:

The Merck Index, 12th Ed.,
CRC handbook of Chemistry and Physics, 81st Ed., 2000-2001
RTECS (www.ccinforweb2.ccohs.ca/rtecs)
IUCLID Dataset: 2-ethoxy-2-methylpropane (18/02/2000) (<http://ecb.irc.ec.europa.eu>)

Disclaimer:

The information and recommendations contained herein are based upon data believed to be up-to-date and correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information and recommendations contained herein. We accept no responsibility and disclaim all liability for any harmful effects that may be caused by (incorrect) use, handling, purchase, resale, or exposure to our product. Customers and users of our product must comply with all applicable health and safety laws, regulations, and orders. In particular, they are under an obligation to carry out a risk assessment for the particular work places and to take adequate risk management measures in accordance with the national implementation legislation of EU Directives 89/391 and 98/24.