Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Reference number: 00103

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

1.1. Product identifier

Product form : Substance

Trade name : DIETHYL ETHER FOR SYNTHESIS

 IUPAC name
 : Ethoxyethane

 EC Index-No.
 : 603-022-00-4

 EC-No.
 : 200-467-2

 CAS-No.
 : 60-29-7

 Product code
 : B-00999

 Formula
 : C4H10O

Chemical structure

 H_3C O CH_3

Synonyms : Dether; Ethyl ether; Ethyl oxide; 3-Oxapentane; Ethoxyethane; Diethyl oxide; Solvent ether;

Sulphuric ether; Vitriolic ether

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

1,2,1, Relevant identified uses

Industrial/Professional use spec : Industrial

For professional use only

Use of the substance/mixture : Solvents

Laboratory chemicals

Manufacture of substances

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Bio-Chem Chemicals

5455, Nicholson Road Science Market, Ambala Cantt. 133001 Haryana (India)

+91-82952 41953

info@biofinechemical.com - www.biofinechemical.com

1.4. Emergency telephone number

Emergency number : +91 99921 51495 (10.00am - 06.30pm) (Office Hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Full text of H- and EUH-statements: see section 16

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 1 H224
Acute toxicity (oral), Category 4 H302
Specific target organ toxicity – Single exposure, Category 3, Narcosis H336

Adverse physicochemical, human health and environmental effects

Extremely flammable liquid and vapour. May cause drowsiness or dizziness. Harmful if swallowed.

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2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)





GHS02

GHS07

Signal word (CLP) : Danger

Hazard statements (CLP) : H224 - Extremely flammable liquid and vapour.

H302 - Harmful if swallowed.

H336 - May cause drowsiness or dizziness.

Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

No smoking.

P233 - Keep container tightly closed.

P241 - Use explosion-proof electrical/ventilating/lighting equipment. P261 - Avoid breathing dust, fume, gas, mist, spray, vapours.

P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.

EUH-statements EUH019 - May form explosive peroxides.

EUH066 - Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

Contains no PBT/vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type Mono-constituent Name : DIETHYL ETHER CAS-No. 60-29-7 FC-No 200-467-2 EC Index-No. 603-022-00-4

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Call a poison center or a doctor if you feel unwell.

: Remove person to fresh air and keep comfortable for breathing. Remove person to fresh air First-aid measures after inhalation

and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

First-aid measures after skin contact : Rinse skin with water/shower. Take off immediately all contaminated clothing. Repeated

exposure may cause skin dryness or cracking.

First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing, Rinse cautiously with

water for several minutes. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER/doctor if you feel unwell. Call a poison center or a

doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : May cause drowsiness or dizziness. Symptoms/effects after inhalation : May cause drowsiness or dizziness.

Symptoms/effects after skin contact : Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after ingestion : Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2). Water spray. Dry

powder. Foam. Carbon dioxide.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Extremely flammable liquid and vapour.

Explosion hazard : May form flammable/explosive vapour-air mixture. Heat may build pressure, rupturing

closed containers, spreading fire and increasing risk of burns and injuries. May form

explosive peroxides.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Firefighting instructions : DO NOT fight fire when fire reaches explosives. Evacuate area.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained

breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames.

No smoking.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. No open flames, no sparks, and

no smoking. Avoid breathing dust, fume, gas, mist, spray, vapours.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Avoid breathing

dust/fume/gas/mist/vapours/spray. For further information refer to section 8: "Exposure

controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Collect spillage. Large spills: scoop solid spill

into closing containers. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable. Hazardous

waste due to potential risk of explosion.

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Precautions for safe handling

: No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Avoid breathing dust, fume, gas, mist, spray, vapours. Use only outdoors or in a well-ventilated area. Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment.

Hygiene measures

: Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment. Use explosion-proof

electrical/ventilating/lighting equipment. Proper grounding procedures to avoid static

electricity should be followed.

Storage conditions : Keep in fireproof place. Keep container tightly closed. Store in a well-ventilated place. Keep

cool. Store locked up.

Incompatible products : Oxidizing agent. Incompatible materials : Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):







8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles or safety glasses

8.2.2.2. Skin protection

Hand protection:

Protective gloves

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8.2.2.3. Respiratory protection

Respiratory protection:

Wear appropriate mask

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state
Appearance
Boltzmann
Appearance
Clear liquid.
Clear liquid.
Fraction 12 g/mol
Colour
Colour
Sweetish odour.
Odour threshold
DH
Colour
No data available

Relative evaporation rate (butylacetate=1) : 37.5

Melting point : Not applicable
Freezing point : -116 °C

Boiling point : 34.6 °C

Flash point : -40 °C

Auto-ignition temperature : 175 °C

Decomposition temperature : No data available Flammability (solid, gas) : Flammable

Extremely flammable liquid and vapour, Not applicable

Vapour pressure : 563 hPa at 20 °C

Relative vapour density at 20 °C : 2.6

Relative density : No data available

Density : 0.713 – 0.715 g/cm³ at 20°C Solubility : Water: 65 g/l at 20°C Partition coefficient n-octanol/water (Log Pow) : No data available Viscosity, kinematic : No data available Viscosity, dynamic : No data available

Explosive properties : May form explosive peroxides.

Oxidising properties : No data available Lower explosive limit (LEL) : 1.7 vol % Upper explosive limit (UEL) : 36 vol %

9.2. Other information

Refractive index : 1.351 – 1.353 (20°C, 589 nm)

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable liquid and vapour.

10.2. Chemical stability

Extremely flammable liquid and vapour. May form flammable/explosive vapour-air mixture. May form explosive peroxides.

10.3. Possibility of hazardous reactions

Reacts vigorously with strong oxidizers and acids.

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10.4. Conditions to avoid

Sparks. Heat. Direct sunlight. Overheating. Open flame. Avoid contact with hot surfaces. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed. : Not classified Acute toxicity (dermal) : Not classified Acute toxicity (inhalation) Skin corrosion/irritation : Not classified

Additional information : Repeated exposure may cause skin dryness or cracking.

Serious eye damage/irritation : Not classified Respiratory or skin sensitisation Not classified Germ cell mutagenicity : Not classified Carcinogenicity : Not classified Reproductive toxicity : Not classified

STOT-single exposure : May cause drowsiness or dizziness.

STOT-repeated exposure : Not classified Aspiration hazard : Not classified Potential adverse human health effects and

symptoms

: Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse

effects in the environment.

Hazardous to the aquatic environment, short-term

(acute)

: Not classified

Hazardous to the aquatic environment, long-term

(chronic)

: Not classified

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance

with local, regional, national and/or international regulation.

Additional information : Handle empty containers with care because residual vapours are flammable. Hazardous

waste due to potential risk of explosion. Flammable vapours may accumulate in the

container.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1 UN number

 UN-No. (ADR)
 : UN 1155

 UN-No. (IMDG)
 : UN 1155

 UN-No. (IATA)
 : UN 155

 UN-No. (ADN)
 : UN 1155

 UN-No. (RID)
 : UN 1155

14.2. UN proper shipping name

Proper Shipping Name (ADR) : DIETHYL ETHER (ETHYL ETHER)
Proper Shipping Name (IMDG) : DIETHYL ETHER (ETHYL ETHER)

Proper Shipping Name (IATA) : Diethyl ether

Proper Shipping Name (ADN) : DIETHYL ETHER (ETHYL ETHER)
Proper Shipping Name (RID) : DIETHYL ETHER (ETHYL ETHER)

Transport document description (ADR)

: UN 1155 DIETHYL ETHER (ETHYL ETHER), 3, I, (D/E)

Transport document description (IMDG)

: UN 1155 DIETHYL ETHER (ETHYL ETHER), 3, I (-40°C c.c.)

Transport document description (IATA) : UN 1155 Diethyl ether, 3, I

Transport document description (ADN) : UN 1155 DIETHYL ETHER (ETHYL ETHER), 3, I
Transport document description (RID) : UN 1155 DIETHYL ETHER (ETHYL ETHER), 3, I

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 3
Danger labels (ADR) : 3



IMDG

Transport hazard class(es) (IMDG) : 3
Danger labels (IMDG) : 3



IATA

Transport hazard class(es) (IATA)

Danger labels (IATA)



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ADN

Transport hazard class(es) (ADN) : 3
Danger labels (ADN) : 3



RID

Transport hazard class(es) (RID) : 3
Danger labels (RID) : 3



14.4. Packing group

Packing group (ADR) : I
Packing group (IMDG) : I
Packing group (IATA) : I
Packing group (ADN) : I
Packing group (RID) : I

14.5. Environmental hazards

Dangerous for the environment : No Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) : F1
Limited quantities (ADR) : 0
Excepted quantities (ADR) : E3
Packing instructions (ADR) : P001
Mixed packing provisions (ADR) : MP7, MP17
Portable tank and bulk container instructions (ADR) : T11

Portable tank and bulk container instructions (ADR) : 111

Portable tank and bulk container special provisions : TP2

(ADR)

Tank code (ADR): L4BNVehicle for tank carriage: FLTransport category (ADR): 1Special provisions for carriage - Operation (ADR): S2, S20

Hazard identification number (Kemler No.) : 33



Tunnel restriction code (ADR) : D/E EAC code : •3YE

Transport by sea

Orange plates

Limited quantities (IMDG): 0Excepted quantities (IMDG): E3Packing instructions (IMDG): P001Tank instructions (IMDG): T11Tank special provisions (IMDG): TP2EmS-No. (Fire): F-EEmS-No. (Spillage): S-D

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Stowage category (IMDG) : E
Stowage and handling (IMDG) : SW2
Flash point (IMDG) : -40°C c.c.

Properties and observations (IMDG) : Colourless, volatile and mobile liquid with a pleasant aromatic odour. Flashpoint: -40°C c.c.

Explosive limits: 1.7% to 48%. Boiling point: 34°C. Immiscible with water. In the presence of oxygen or on long standing or exposure to sunlight, unstable peroxides sometimes form; these may explode spontaneously or when heated. Strongly narcotic. Readily ignited by

static electricity.

MFAG-No : 127

Air transport

PCA Excepted quantities (IATA) : E3 : Forbidden PCA Limited quantities (IATA) PCA limited quantity max net quantity (IATA) : Forbidden : 351 PCA packing instructions (IATA) PCA max net quantity (IATA) : 1L CAO packing instructions (IATA) : 361 CAO max net quantity (IATA) : 30L ERG code (IATA) : 3AH

Inland waterway transport

Classification code (ADN) : F1
Limited quantities (ADN) : 0
Excepted quantities (ADN) : E3
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 1

Rail transport

Classification code (RID) : F1
Limited quantities (RID) : 0
Excepted quantities (RID) : E3
Packing instructions (RID) : P001
Mixed packing provisions (RID) : MP7, MP17
Portable tank and bulk container instructions (RID) : T11

Portable tank and bulk container special provisions (RID)

Tank codes for RID tanks (RID) : L4BN
Transport category (RID) : 1
Hazard identification number (RID) : 33

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

: TP2

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	
3(a)	DIETHYL ETHER FOR SYNTHESIS	
3(b)	DIETHYL ETHER FOR SYNTHESIS	
40.	DIETHYL ETHER FOR SYNTHESIS	

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REACH Annex XIV (Authorisation List)

DIETHYL ETHER FOR SYNTHESIS is not on the REACH Annex XIV List

REACH Candidate List (SVHC)

DIETHYL ETHER FOR SYNTHESIS is not on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

DIETHYL ETHER FOR SYNTHESIS is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 july 2012 concerning the export and import of hazardous chemicals.

POP Regulation (Persistent Organic Pollutants)

DIETHYL ETHER FOR SYNTHESIS is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Ozone Regulation (1005/2009)

DIETHYL ETHER is not subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.

Explosives Precursors Regulation (2019/1148)

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on drug precursors)

15.1.2. National regulations

France

Occupational diseases		
Code	Description	
RG 84	Conditions caused by liquid organic solvents for professional use: saturated or unsaturated aliphatic or cyclic liquid hydrocarbons and mixtures thereof; liquid halogenated hydrocarbons; nitrated derivatives of aliphatic hydrocarbons; alcohols; glycols, glycol ethers; ketones; aldehydes; aliphatic and cyclic ethers, including tetrahydrofuran; esters; dimethylformamide and dimethylacetamine; acetonitrile and propionitrile; pyridine; dimethylsulfone and dimethylsulfoxide	

Germany

Water hazard class (WGK) : WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 80).

Chemicals Prohibition Ordinance (ChemVerbotsV) : This product is subject to ChemVerbotsV Annex 2 Entry 2. The following requirement must

be observed: Basic requirements for the implementation of the submission (according to § 8

paragraph 1, 3 and 4).

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed SZW-lijst van mutagene stoffen : The substance is not listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed SZW-lijst van reprotoxische stoffen – : The substance is not listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid

SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

Denmark

Class for fire hazard : Class I-1 Store unit : 1 liter

Classification remarks : F+ <Flam. Liq. 1>; Emergency management guidelines for the storage of flammable liquids

must be followed

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

Switzerland

Storage class (LK) : LK 3 - Flammable liquids

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15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:		
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways	
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road	
ATE	Acute Toxicity Estimate	
BCF	Bioconcentration factor	
BLV	Biological limit value	
BOD	Biochemical oxygen demand (BOD)	
COD	Chemical oxygen demand (COD)	
DMEL	Derived Minimal Effect level	
DNEL	Derived-No Effect Level	
EC-No.	European Community number	
EC50	Median effective concentration	
EN	European Standard	
IARC	International Agency for Research on Cancer	
IATA	International Air Transport Association	
IMDG	International Maritime Dangerous Goods	
LC50	Median lethal concentration	
LD50	Median lethal dose	
LOAEL	Lowest Observed Adverse Effect Level	
NOAEC	No-Observed Adverse Effect Concentration	
NOAEL	No-Observed Adverse Effect Level	
NOEC	No-Observed Effect Concentration	
OECD	Organisation for Economic Co-operation and Development	
OEL	Occupational Exposure Limit	
РВТ	Persistent Bioaccumulative Toxic	
PNEC	Predicted No-Effect Concentration	
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail	
SDS	Safety Data Sheet	
STP	Sewage treatment plant	
ThOD	Theoretical oxygen demand (ThOD)	
TLM	Median Tolerance Limit	
voc	Volatile Organic Compounds	
CAS-No.	Chemical Abstract Service number	
N.O.S.	Not Otherwise Specified	
vPvB	Very Persistent and Very Bioaccumulative	
ED	Endocrine disrupting properties	

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Full text of H- and EUH-statements:		
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4	
EUH019	May form explosive peroxides.	
EUH066	Repeated exposure may cause skin dryness or cracking.	
Flam. Liq. 1	Flammable liquids, Category 1	
H224	Extremely flammable liquid and vapour.	
H302	Harmful if swallowed.	
H336	May cause drowsiness or dizziness.	
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis	

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.