

TETRAETHYLENE GLYCOL DIMETHYL ETHER TEGDME

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

1.1. Product identifier

Product name: Tetraethylene glycol dimethyl ether TEGDME
CAS Number: 143-24-8
EC Number: 205-594-7

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

Industry sector: Functional Fluids
Type of use: Phase transfer catalyst
Solvent

1.3 Details of the supplier of the safety data sheet

Company name: East Harbour Group Ltd
20 Clough Road, Severalls Industrial Park
Colchester, Essex, CO4 9QS
United Kingdom

Telephone: +44 (0) 333 242 0100
Email: info@eastharbourgroup.com

1.4 Emergency telephone number

Emergency telephone: 0800 246 1274

Section 2: Hazardous identification

2.1 Classification of the substance or mixture

GHS Classification

Reproductive toxicity, Category 1B

H360Df

May damage the unborn child. Suspected of damaging fertility.

2.2 Label elements

Pictogram



Signal word

Danger

Hazard statements

H360Df

May damage the unborn child. Suspected of damaging fertility.

Precautionary statements

Prevention

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P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response

P308 + P313 IF exposed or concerned: Get medical advice/attention.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

No additional hazards are known except those derived from the labelling.

Section 3: Composition/information on ingredients

Substance / Mixture	Substance
Substance name	bis(2-(2-Methoxyethoxy)ethyl)ether
CAS-No.	Not Assigned

Components

Chemical name	CAS-No.	Concentration (% w/w)
bis(2-(2-methoxyethoxy)ethyl) ether	143-24-8	>= 90 -<= 100

Section 4: First aid measures

General advice

Remove contaminated clothing and shoes.

If inhaled

If inhaled, remove to fresh air.
 Get medical advice/ attention.

In case of skin contact

In case of contact, immediately flush skin with plenty of water.

In case of eye contact

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

If swallowed

Get medical attention immediately.

Most important symptoms and effects, both acute and delayed

No symptoms known currently.
 No hazards known at this time.

Notes to physician

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Treat symptomatically.

Section 5: Fire-fighting measures

Suitable extinguishing media

Foam
Water spray jet
Carbon dioxide (CO₂)
Dry powder

Specific hazards during firefighting

In case of fires, hazardous combustion gases are formed:
Carbon monoxide (CO)
Carbon dioxide (CO₂)

Specific extinguishing methods

Apply foam in large quantities because some of it will be destroyed by the product.

Special protective equipment for firefighters

Self-contained breathing apparatus

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear suitable protective equipment.

Environmental precautions

Do not allow contact with soil, surface or ground water.
Prevent product from entering drains.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Section 7: Handling and storage

Advice on protection against fire and explosion

Cool endangered containers with water spray jet.

Advice on safe handling

Ensure adequate ventilation.

Further information on storage conditions

Do not leave vessels/containers open
Prevent entry of air/oxygen (peroxide formation)

Section 8: Exposure controls/personal protection

Components with workplace control parameters

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Personal protective equipment

Respiratory protection

Use respiratory protection in case of insufficient exhaust ventilation or prolonged exposure

Full mask to standard DIN EN 136

Filter A (organic gases and vapours) to standard DIN EN 141 The use of filter apparatus presupposes that the environment atmosphere contains at least 17% oxygen by volume, and does not exceed the maximum gas concentration, usually 0.5% by volume. Relevant guidelines to be considered include EN 136/141/143/371/372 as well as other national regulations.

Hand protection

Break through time	480 min
Glove thickness	0.7 mm
Remarks	Long-term exposure Impervious butyl rubber gloves
Break through time	10 min
Glove thickness	0.4 mm

Remarks

For short-term exposure (splash protection): Nitrile rubber gloves.

Remarks

These types of protective gloves are offered by various manufacturers. Please note the manufacturers' detailed statements, especially about the minimum thickness and the minimum breakthrough time. Consider also the particular working conditions under which the gloves are being used.

Eye protection

Safety glasses

Protective measures

Avoid contact with skin and eyes.

Hygiene measures

Keep away from food and drink.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Liquid
Colour	colourless
Odour	weak
Odour Threshold	not tested.
pH	Concentration: 100 g/l neutral
Melting point	-30 °C Method: DIN 51583
Boiling point	275 °C Method: OECD Test Guideline 103
Flash point	136 °C Method: DIN EN 22719 / ISO 2719 (closed cup)
Evaporation rate	> 3,000 Method: DIN 53170

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Self-ignition	Not applicable
Burning number	Not applicable
Upper explosion limit / upper flammability limit	not tested.
Lower explosion limit / Lower flammability limit	not tested.
Vapour pressure	0.099 Pa (20 °C)
Method	OECD Test Guideline 104
Relative vapour density	Not applicable
Density	1.01 - 1.02 g/cm ³ (20 °C)
Method	DIN 51757
Bulk density	Not applicable
Solubility(ies)	
Water solubility	completely miscible (20 °C) Method: OECD Test Guideline 105
Solubility in other solvents	not tested.
Solvent	fat
Partition coefficient n-octanol/water	log Pow: -0.84 (23 °C) Method: OECD Test Guideline 107
Auto-ignition temperature	270 °C Method: EC/440/2008, A.15
Decomposition temperature	360 °C Method: DSC Can be distilled without decomposing, however, beware of possible peroxide content.
Viscosity	
Viscosity, dynamic	3.73 mPa.s (20 °C) Method: OECD Test Guideline 114
Viscosity, kinematic	4.1 mm ² /s (20 °C) Method: DIN 51562 3.69 mm ² /s (20 °C) Method: OECD Test Guideline 114
Explosive properties	Not explosive Method: OECD Test Guideline 113
Oxidizing properties	Not applicable
Surface tension	66.7 mN/m, 20 °C, OECD Test Guideline 115
Molecular weight	222.3 g/mol
Minimum ignition energy	not tested.
Particle size	Not applicable

Section 10: Stability and Reactivity

Reactivity	See section 10.3. "Possibility of hazardous reactions"
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	None known.
Incompatible materials	not known
Hazardous decomposition products	When handled and stored appropriately, no dangerous decomposition products are known

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Section 11: Toxicological Information

Acute toxicity

Components:

bis(2-(2-methoxyethoxy)ethyl) ether

Acute oral toxicity	LD50 (Rat, female): 3,850 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	Remarks: No adverse effect has been observed in acute toxicity tests.
Acute dermal toxicity	Remarks: No adverse effect has been observed in acute toxicity tests.

Skin corrosion/irritation

Components:

bis(2-(2-methoxyethoxy)ethyl) ether

Species	Rabbit
Method	OECD Test Guideline 404
Result	No skin irritation

Serious eye damage/eye irritation

Components:

bis(2-(2-methoxyethoxy)ethyl) ether

Species	Rabbit
Method	OECD Test Guideline 405
Result	No eye irritation

Respiratory or skin sensitisation

Product

Remarks	no data available
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Components:

bis(2-(2-methoxyethoxy)ethyl) ether

Test Type	Local lymph node assay (LLNA)
Species	Mouse
Method	OECD Test Guideline 429
Result	Not a skin sensitizer.
Remarks	By analogy with a product of similar composition

Germ cell mutagenicity

Components:

bis(2-(2-methoxyethoxy)ethyl) ether

Genotoxicity in vitro	
Test Type: Ames test in vitro	
Metabolic activation: with and without metabolic activation	
Method: OECD Test Guideline 471	
Result: negative	

Test Type	Mammalian cell gene mutation assay
Test system	Chinese hamster ovary cells
Metabolic activation	with and without metabolic activation
Method	OECD Test Guideline 476
Result	negative

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Remarks	By analogy with a product of similar composition
Test Type	unscheduled DNA synthesis assay
Test system	human diploid fibroblasts
Metabolic activation	with and without metabolic activation
Method	OECD Test Guideline 482
Result	negative
Remarks	By analogy with a product of similar composition

Germ cell mutagenicity - Assessment
In vitro tests did not show mutagenic effects, In vivo tests did not show mutagenic effects

Carcinogenicity

Components:

bis(2-(2-methoxyethoxy)ethyl) ether

Carcinogenicity – Assessment No information available.

Reproductive toxicity

Components:

bis(2-(2-methoxyethoxy)ethyl) ether

Effects on foetal development

Test Type: Pre-natal

Species: Rabbit

Strain: New Zealand white

Application Route: oral (gavage)

General Toxicity Maternal: NOEL: 125 mg/kg body weight

Developmental Toxicity: NOAEL: 75 mg/kg body weight

Method: OECD Test Guideline 414

Remarks: By analogy with a product of similar composition

Reproductive toxicity – Assessment
May damage the unborn child. Suspected of damaging fertility.
Presumed human reproductive toxicant

STOT - single exposure

Components:

bis(2-(2-methoxyethoxy)ethyl) ether:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Components:

bis(2-(2-methoxyethoxy)ethyl) ether

Assessment The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

bis(2-(2-methoxyethoxy)ethyl) ether

Species Rat, male and female

NOAEL 250 mg/kg bw/day

Application Route oral (gavage)

Exposure time 28 d

Method OECD Test Guideline 407

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Aspiration toxicity

Components:

bis(2-(2-methoxyethoxy)ethyl) ether

No aspiration toxicity classification

Section 12: Ecological Information

Ecotoxicity

Product

Toxicity to microorganisms Remarks: no data available

Components:

bis(2-(2-methoxyethoxy)ethyl) ether

Toxicity to fish

LC50 (Danio rerio (zebra fish)): > 5,000 mg/l

End point: mortality

Exposure time: 96 h

Test Type: static test

Method: OECD Test Guideline 203

Remarks: By analogy with a product of similar composition

Toxicity to daphnia and other aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 7,467 mg/l

End point: Immobilization

Exposure time: 48 h

Test Type: static test

Analytical monitoring: yes

Method: OECD Test Guideline 202

GLP: yes

Toxicity to algae/aquatic plants

EC50 (Pseudokirchneriella subcapitata (microalgae)): 8,996 mg/l

End point: Growth rate

Exposure time: 72 h

Test Type: static test

Analytical monitoring: yes

Method: OECD Test Guideline 201

GLP: yes

Toxicity to fish (Chronic toxicity)

Remarks: no data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

320 mg/l

End point: Reproduction rate

Exposure time: 21 d

Species: Daphnia magna (Water flea)

Test Type: semi-static test

Method: OECD Test Guideline 211

Remarks: By analogy with a product of similar composition

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Section 13: Disposal considerations

Disposal methods

Waste from residues

Incineration in suitable incineration plant, observing local authority regulations.

Contaminated packaging

Packaging that cannot be cleaned should be disposed of as product waste.

Section 14: Transport Information

Road Transport India	not restricted	
IATA	not restricted	
IMDG	not	restricted

Section 15: Regulatory Information

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

Apart from the data/regulations specified in this chapter, no further information is available concerning safety, health and environmental protection.

The factories act, 1948

The Motor Vehicles Acts, 1988

This product is classified and labelled in accordance with Indian regulations.

Section 16: Other Information

Full text of other abbreviations

AIC	Australian Inventory of Industrial Chemicals;
ANTT	National Agency for Transport by Land of Brazil;
ASTM	American Society for the Testing of Materials;
bw	Body weight;
CMR	Carcinogen, Mutagen or Reproductive Toxicant;
DIN	Standard of the German Institute for Standardisation;
DSL	Domestic Substances List (Canada);
ECx	Concentration associated with x% response;
ELx	Loading rate associated with x% response;
EmS	Emergency Schedule;
ENCS	Existing and New Chemical Substances (Japan);
ErCx	Concentration associated with x% growth rate response;
ERG	Emergency Response Guide;
GHS	Globally Harmonized System;
GLP	Good Laboratory Practice;
IARC	International Agency for Research on Cancer;
IATA	International Air Transport Association;
IBC	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk;
IC50	Half maximal inhibitory concentration;
ICAO	International Civil Aviation Organization;

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IECSC	Inventory of Existing Chemical Substances in China;
IMDG	International Maritime Dangerous Goods;
IMO	International Maritime Organization;
ISHL	Industrial Safety and Health Law (Japan);
ISO	International Organisation for Standardization;
KECI	Korea Existing Chemicals Inventory;
LC50	Lethal Concentration to 50 % of a test population;
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose);
MARPOL	International Convention for the Prevention of Pollution from Ships;
n.o.s.	Not Otherwise Specified;
Nch	Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration;
NO(A)EL	No Observed (Adverse) Effect Level;
NOELR	No Observable Effect Loading Rate;
NOM	Official Mexican Norm;
NTP	National Toxicology Program;
NZIoC	New Zealand Inventory of Chemicals;
OECD	Organization for Economic Co-operation and Development;
OPPTS	Office of Chemical Safety and Pollution Prevention;
PBT	Persistent, Bioaccumulative and Toxic substance;
PICCS	Philippines Inventory of Chemicals and Chemical Substances;
(Q)SAR	(Quantitative) Structure Activity Relationship;
REACH	Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals;
SADT	Self-Accelerating Decomposition Temperature;
SDS	Safety Data Sheet;
TCSI	Taiwan Chemical Substance Inventory;
TDG	Transportation of Dangerous Goods;
TSCA	Toxic Substances Control Act (United States);
UN	United Nations;
UNRTDG	United Nations Recommendations on the Transport of Dangerous Goods;
vPvB	Very Persistent and Very Bioaccumulative;
WHMIS	Workplace Hazardous Materials Information System