

SAFETY DATA SHEET

Revision date 2015-08-17

Revision number 2.01

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

1.1 Product identifier

Product name	BISOMER [®] TEGDMA
Product code	745792
Synonyms	Triethylene glycol dimethacrylate

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

Recommended use [RU]	Monomer for special polymers
Uses advised against	Mixtures containing unreacted liquid monomer intended to come into contact with skin or nails

1.3 Details of the supplier of the safety data sheet

Supplier	GEO Specialty Chemicals UK Ltd Charleston Road, Hardley, Hythe Southampton, Hampshire SO45 3ZG United Kingdom Phone: +44 (0)23 80894666 Fax No: +44 (0)23 80243113
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Responsibility Statement	For further information, please contact safety-data-sheet-fp@geosc.com
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1.4 Emergency telephone number

Emergency telephone	24 Hour Emergency Phone Number GEO Specialty Chemicals UK Ltd +44 (0)23 80891806
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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Skin sensitization	Category 1B
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2.2 Label elements



Signal word	WARNING
Hazard statements	H317 - May cause an allergic skin reaction
Precautionary statements	
Prevention	Wear protective gloves
Response	IF ON SKIN: Wash with plenty of soap and water
Storage	None
Disposal	None

2.3 Other hazards which do not result in classification

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Component	Common name	CAS-No	weight-%
Methacrylic acid, diester with triethylene glycol	Triethylene glycol dimethacrylate	109-16-0	> 94

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice	In case of adverse health effects seek medical advice.
Eye contact	Rinse immediately with plenty of running water (for 10 minutes). Seek medical attention if necessary.
Skin contact	Rinse with running water and soap. If skin irritation occurs: Get medical advice/attention.
Ingestion	Rinse mouth with water, then drink one or two glasses of water.
Inhalation	Remove to fresh air.

4.2 Most important symptoms and effects, both acute and delayed

Most important symptoms and effects	None known.
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4.3 Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media Water spray jet, Alcohol-resistant foam, Extinguishing powder, Carbon dioxide.

Extinguishing media which must not be used for safety reasons High pressure waterjet.

5.2 Special hazards arising from the substance or mixture

Special Hazard Formation of toxic gases is possible during heating or in fires. The product may undergo spontaneous polymerization at high temperatures. Polymerization is exothermic and may cause damage to the container and/or release of thermal decomposition products.

5.3 Advice for firefighters

Special protective equipment for firefighters Full protective clothing and approved self-contained breathing apparatus required for firefighting personnel.

Firefighting measures Cool exposed containers with water spray after extinguishing fire.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions Wear suitable protective clothing and gloves.

6.2 Environmental precautions

Environmental precautions Do not empty into drains/surface water/ground water. Inform authorities in the event of product spillage to water courses or sewage systems.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up Remove with liquid-absorbing material (sand, peat, sawdust). Dispose of contaminated material as waste according to Section 13.

6.4 Reference to other sections

See Section 12 for additional Ecological Information

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling Use only in well-ventilated areas
Ensure that eyewash stations and safety showers are close to the workstation location.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

The product is stabilized against spontaneous polymerization before delivery. However, if the permissible storage time or storage temperature are greatly exceeded the product may polymerize.

Keep only in the original container in a cool, well-ventilated place

Store at temperatures not exceeding 25 °C/ 77 °F

Store in a dry place

Store away from direct heat or sunlight.

Tanks should preferably contain no dead spaces where the product can be trapped and polymerize. Internal structural members should therefore be kept to a minimum and tanks should be welded.

Storage tank vents, especially those fitted with flame arrestors, should be inspected regularly for polymer fouling which can arise from vapor phase polymerization.

Do not store together with oxidants.

Do not store together with reductants.

Materials to avoid

Reaction with oxidants.

Reaction with reducing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters**Occupational exposure limit value**

Component	Ministry of Labor (Republic of Korea, 3/2012)	ACGIH TLV
Methacrylic acid, diester with triethylene glycol 109-16-0	NAV	NAV

Legend

NAV - Not available

8.2 Appropriate engineering controls

Environmental exposure controls No information available

8.3 Personal Protective Equipment

Eye/face Protection Tight sealing safety goggles.

Hand Protection Polychloroprene gloves. Coating thickness 1.1 mm. Level 5 > 240 min breakthrough time.

Skin and body protection Wear suitable protective clothing

Respiratory protection Use only in well-ventilated areas. Filter A2 is recommended in cases of prolonged exposure.

Other personal protection data Eyewash fountains and safety showers must be easily accessible.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state
Color

liquid
colorless

Odor

characteristic

Odor threshold

No information available

pH

No information available

Melting / freezing point	-88 °C / -126.4 °F - OECD Test No. 102/EU Method A.1
Boiling point / boiling range	> 250 °C / > 482 °F - OECD Test No. 103/EU Method A.2
Flash point	> 150.0 °C / > 302.0 °F - EU Method A.9: Closed Cup
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit	No information available
Lower flammability limit	No information available
Vapor pressure	0.077 Pa @ 20 °C By analogy; - OECD Test No. 104
Vapor density	No information available
Specific gravity	No information available
Solubility(ies)	
Solubility (water)	3.6 g/L @ 20 °C - OECD Test No. 105
Solubility in other solvents	No information available
Partition coefficient: n-octanol/water	log Pow = 2.3 - OECD Test No. 117/EU Method A.8
Autoignition temperature	255 °C / 491 °F - EU Method A.15
Decomposition temperature	No information available
Viscosity	
Kinematic viscosity	9.15 mm ² /s @ 20 °C - OECD Test No. 114
Dynamic viscosity	No information available
Molecular weight	286 g/mol
Density	1.0760 g/cm ³ @ 20 °C - ASTM D 1298-99

10. STABILITY AND REACTIVITY

10.1 Reactivity

Reactivity

Polymerizes readily unless inhibited. Polymerization is highly exothermic and, if not controlled, may be violent.

10.2 Chemical stability

Chemical stability

Stable under normal conditions of handling, use and transportation. Periodic air sparging in storage will assist long term stability.

10.3 Possibility of hazardous reactions

Hazardous polymerization

May occur if inhibitor is depleted or if exposed to high temperature.

10.4 Conditions to avoid

Conditions to avoid

This product contains a peroxidation inhibitor. To maintain inhibitor activity, oxygen must not be eliminated from the atmosphere above the product. Avoid radical forming substances (metal-ions, peroxides). Avoid heating. If prolonged excursions above the recommended storage temperature occur, then the rate of inhibitor depletion could accelerate, leading to an increased risk of polymerization. In these circumstances it is recommended that the inhibitor level be checked periodically using ASTM procedure D 3125, and more inhibitor added if depletion is observed.

10.5 Incompatible materials**Materials to avoid**

Reaction with oxidants. Reaction with reducing agents.

10.6 Hazardous decomposition products**Hazardous decomposition products**

Carbon oxides. Irritating vapors.

11. TOXICOLOGICAL INFORMATION

11.1 Information on likely routes of exposure**Acute health hazard****Inhalation**

None known.

Eye contact

May cause slight irritation.

Skin contact

May cause sensitization by skin contact. This product is not considered to be a skin irritant.

Ingestion

Low toxicity by this route.

11.2 Health hazards**Acute toxicity - Product Information****Oral LD50**

> 2,000 mg/kg

Dermal LD50

No information available

Inhalation LC50

No information available

Skin corrosion/irritation

Not irritating
Method: OECD Test No. 404: Acute Dermal Irritation/Corrosion

Serious eye damage/eye irritation

Slightly irritating, does not require labelling
Method: OECD Test No. 405: Acute Eye Irritation/Corrosion

Sensitization

Dermal sensitization: sensitizing
Method: OECD Test No. 429

Germ cell mutagenicity

No information available

Mutagenicity

Not mutagenic
Method: OECD Test No. 471: Bacterial Reverse Mutation Test

Carcinogenicity

Not Carcinogenic
Method: EPA Dermal Bioassay Workshops April 28-29, 1987

Reproductive toxicity	No toxicity to reproduction Method: OECD Test No. 422: Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test
Specific target organ toxicity - Single exposure	The substance or mixture is not classified as specific target organ toxicant, single exposure. (Expert assessment)
Specific target organ toxicity - Repeated exposure	The substance or mixture is not classified as specific target organ toxicant, repeated exposure. (Expert assessment)
Aspiration hazard	No information available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute aquatic toxicity - Product Information

Fish	LC50 (96 hour) = 16.4 mg/l Method: OECD Test No. 203: Fish, Acute Toxicity Test
Crustacea	No information available
Algae/aquatic plants	EC50 > 100 mg/L Method: OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test

12.2 Persistence and degradability

Persistence and degradability	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)
Ultimate biodegradation	Readily biodegradable Method: OECD Test No. 301B: Ready Biodegradability: CO2 Evolution Test (TG 301 B)

12.3 Bioaccumulative potential

Bioaccumulative potential	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)
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12.4 Mobility in soil

Mobility	No information available
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12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT) This substance is not considered to be very persistent nor very bioaccumulating (vPvB)
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12.6 Other adverse effects

Other information	None known
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13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal of wastes	Waste incineration with the approval of the responsible local authority.
Contaminated packaging	Disposal must be made according to official regulations. Packaging that cannot be cleaned are to be disposed of in the same manner as the product.

14. TRANSPORT INFORMATION

DOT (US) Not regulated

- 14.1 UN number
- 14.2 Proper shipping name
- 14.3 Hazard class
- 14.4 Packing group
- 14.5 Environmental hazard

Land transport (ADR/RID) Not regulated

- 14.1 UN number
- 14.2 Proper shipping name
- 14.3 Hazard class
- 14.4 Packing group
- 14.5 Environmental hazard

Inland waterway transport (ADN) Not regulated

- 14.1 UN number
- 14.2 Proper shipping name
- 14.3 Hazard class
- 14.4 Packing group
- 14.5 Environmental hazard

Air transport (ICAO-TI / IATA-DGR) Not regulated

- 14.1 UN number
- 14.2 Proper shipping name
- 14.3 Hazard class
- 14.4 Packing group
- 14.5 Environmental hazard

Sea transport (IMDG) Not regulated

- 14.1 UN number
- 14.2 Proper shipping name
- 14.3 Hazard class
- 14.4 Packing group
- 14.5 Environmental hazard

14.6 Special precautions for user

No information available

15. REGULATORY INFORMATION

15.1 Industrial Safety and Health Law

ISHA Article 37 None of the components are listed.

ISHA Article 38 None of the components are listed.

Component	ISHA - Substances to be controlled - Acids and bases	ISHA - Substances to be controlled - Metals	ISHA - Substances to be controlled - Organic Substances
Methacrylic acid, diester with triethylene glycol	Not applicable	Not applicable	Not applicable

Component	ISHA - Harmful factors subject to special health check-up - Acids and bases	ISHA - Harmful factors subject to special health check-up - Metals	ISHA - Harmful factors subject to special health check-up - Organic Substances
Methacrylic acid, diester with triethylene glycol	Not applicable	Not applicable	Not applicable

Component	ISHA - Harmful agents subject to Work Environment Measuring - Acids and bases	ISHA - Harmful agents subject to Work Environment Measuring - Metals	ISHA - Harmful agents subject to Work Environment Measuring - Organic Substances
Methacrylic acid, diester with triethylene glycol	Not applicable	Not applicable	Not applicable

[Occupational exposure limits](#)

See section 8 for more information

15.2 Toxic Chemicals Control Law

Component	TCCA - Toxic Chemicals	TCCA - Observational Chemicals	TCCA Article 32 (Banned)	TCCA Article 32 (Restricted)	Accident Precaution Chemicals
Methacrylic acid, diester with triethylene glycol	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

15.3 Dangerous Substances Safety Management Act

Not classified

15.4 Wastes Management

Dispose of contents/container in accordance with all local, regional, national, and international regulations.

15.5 Other information[International Inventories](#)[Australia \(AICS\)](#)

All ingredients are on the inventory or exempt from listing

[Canada \(DSL\)](#)

All ingredients are on the inventory or exempt from listing

[Canada \(NDSL\)](#)

None of the ingredients are on the inventory.

[China \(IECSC\)](#)

All ingredients are on the inventory or exempt from listing

[EINECS \(European Inventory of Existing Chemical Substances\)](#)

All ingredients are on the inventory or exempt from listing

[ELINCS \(European List of Notified Chemical Substances\)](#)

None of the ingredients are on the inventory.

[ENCS \(Japan\)](#)

All ingredients are on the inventory or exempt from listing

[South Korea \(KECL\)](#)

All ingredients are on the inventory or exempt from listing

[Philippines \(PICCS\)](#)

All ingredients are on the inventory or exempt from listing

[TSCA \(United States\)](#)

All ingredients are on the inventory or exempt from listing

[Legend](#)**AICS** - Australian Inventory of Chemical Substances**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**IECSC** - China Inventory of Existing Chemical Substances**ENCS** - Japan Existing and New Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

16. OTHER INFORMATION

Product code 745792

Revision date 2015-08-17

Key or legend to abbreviations and acronyms used in the safety data sheet

NAV - Not available

Additional information

BISOMER® is a registered trademark of GEO Specialty Chemicals UK Ltd.

Disclaimer

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