SAFETY DATA SHEET

Revision date 2020-Jan-13 **Revision number** 2.05

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
REACH registration number 01-2119969287-21-0001

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

Responsibility Statement For further information, please contact **safety-data-sheet-fp@geosc.com**

1.4 Emergency telephone number

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

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

Skin sensitization	Category 1B

2.2 Label elements

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

Signal word WARNING

Hazard statements
H317 - May cause an allergic skin reaction

Precautionary statements
P280 - Wear protective gloves
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

2.3 Other Information

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Component	EU EINECS	weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	(REACh) Regulation (EC 1907/2006)
Methacrylic acid, diester with triethylene glycol 109-16-0	203-652-6	> 94	Skin Sens. 1B (H317)	Registration Number 01-2119969287-21-0001

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixtures

Not applicable

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.

4.3 Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

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
Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

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.

7.3 Specific end use(s)

Specific use(s)
Refer to e-SDS

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit value

Component	European Union	United Kingdom	Spain	Germany
Methacrylic acid, diester with triethylene glycol 109-16-0	NAV	NAV	NAV	NAV

Biological limit values

Component	European Union	United Kingdom	Spain	Germany
Methacrylic acid, diester with triethylene glycol 109-16-0	NAV	NAV	NAV	NAV

Legend
NAV - Not available

Derived No Effect Level (DNEL)						
Name on List	**End User**	**Exposure route**	**Health Effects**	**Exposure Time**	**Values**	**Remarks**
Methacrylic acid, diester with triethylene glycol	workers	Skin contact	long-term - systemic		13.9 mg/kg	
Methacrylic acid, diester with triethylene glycol	workers	Inhalation	long-term - systemic		48.5 mg/m³	
Methacrylic acid, diester with triethylene glycol	consumers	Skin contact	long-term - systemic		8.33 mg/kg	
Methacrylic acid, diester with triethylene glycol	consumers	Inhalation	long-term - systemic		14.5 mg/m³	
Methacrylic acid, diester with triethylene glycol	consumers	Ingestion	long-term - systemic		8.33 mg/kg	

Predicted No Effect Concentration (PNEC)				
Name on List	**Environmental Compartment**	**Exposure Time**	**Values**	**Remarks**
Methacrylic acid, diester with triethylene glycol	Fresh water		0.164 mg/l	
Methacrylic acid, diester with triethylene glycol	Marine water		0.0164 mg/l	

Methacrylic acid, diester with triethylene glycol			10 mg/l	PNEC STP
Methacrylic acid, diester with triethylene glycol			0.164 mg/l	PNEC Aqua (intermittent release)
Methacrylic acid, diester with triethylene glycol	Fresh water sediment		1.85 mg/kg	
Methacrylic acid, diester with triethylene glycol	Marine sediment		0.185 mg/kg	
Methacrylic acid, diester with triethylene glycol	Soil		0.274 mg/kg	

8.2 Exposure controls

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.

Environmental exposure controls
No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	colorless
Appearance	clear
Odor	characteristic
Odor threshold	No information available

Property	Values	Remarks
pH	No information available	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	No information available
Flammability (solid, gas)	No information available	No information available
Flammability Limit in Air		
Upper flammability limit	No information available	No information available
Lower flammability limit	No information available	No information available

Vapor pressure	0.077 Pa @ 20 °C	by analogy; OECD Test No. 104
Vapor density	No information available	No information available
Specific gravity	No information available	No information available
Solubility (water)	3.6 g/L @ 20 °C	OECD Test No. 105
Solubility in other solvents	No information available	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	No information available
Kinematic viscosity	9.15 mm2/s @ 20 °C	OECD Test No. 114
Dynamic viscosity	No information available	No information available
Density	1.0760 g/cm³ @ 20 °C	ASTM D 1298-99

9.2 Other information

Bulk Density	No information available
Explosive properties	Can polymerize violently.
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Softening point	No information available
Molecular weight	286 g/mol
Volatile Organic Compound (VOC) content, wt.%	No information available
Percent Volatile, wt.%	No information available

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 toxicological effects

Acute health hazard

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.

Inhalation
None known.

Acute toxicity

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: Skin Sensitization: Local Lymph Node Assay

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

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)

12.4 Mobility in soil

Mobility
No information available.

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)

12.6 Other adverse effects

Other information
None known

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

US DOT Not regulated
14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group
14.5. Environmental hazards
14.6. Special precautions for user

Land transport (ADR/RID) Not regulated
14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group
14.5. Environmental hazards
14.6. Special precautions for user

Air transport (ICAO-TI / IATA-DGR) Not regulated
14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group
14.5. Environmental hazards
14.6. Special precautions for user

Sea transport (IMDG) Not regulated
14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group
14.5. Environmental hazards
14.6. Special precautions for user

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

15. REGULATORY INFORMATION

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

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

European Union (EINECS)
All ingredients are on the inventory or exempt from listing

European Union (ELINCS)
None of the ingredients are on the inventory.

Japan (ENCS)
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

United States (TSCA)
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
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified 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

15.2 Chemical Safety Report

A Chemical Safety Assessment has been carried out for this substance. Refer to e-SDS.

16. OTHER INFORMATION

Product code 745792

Revision date 2020-Jan-13

Full text of H-Statements referred to under sections 2 and 3
H317 - May cause an allergic skin reaction

Key or legend to abbreviations and acronyms used in the safety data sheet
NAV - Not available

This safety data sheet complies with the requirements of: Regulation (EC) No. 1907/2006.

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

Disclaimer
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