

Revision date 2023-Apr-22

Revision number 1

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

1.1. Product identifier

Product code 745793

Product name BISOMER[®] TEGDMA SP

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

Only representative ERM GmbH
Siemensstrasse 9
63263 Neu-Isenburg
Germany
Phone: +49 (0) 6102 206 0
Fax: +49 (0) 61 02 206-202

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin sensitization	Category 1B - (H317)
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2.2. Label elements

**Warning**

H317 - May cause an allergic skin reaction

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P321 - Specific treatment (see supplemental first aid instructions on this label)

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

P362 + P364 - Take off contaminated clothing and wash it before reuse

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

6 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Contains 0 % of components with unknown hazards to the aquatic environment

2.3. Other hazards

No information available

This product does not contain any known or suspected endocrine disruptors

SECTION 3: Composition/information on ingredients**3.1 Substances**

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Methacrylic acid, diester with triethylene glycol 109-16-0	> 94	01-211996928 7-21-0001	203-652-6	Skin Sens. 1B (H317)	-	-	-

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

Acute Toxicity Estimate

No information available.

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapor - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Methacrylic acid, diester with triethylene glycol 109-16-0	10837	No data available	No data available	No data available	No data available

Statements of hazard	This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59).
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SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

Symptoms	No information available.
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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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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Water spray jet, Alcohol-resistant foam, Extinguishing powder, Carbon dioxide.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	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.
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5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear suitable protective clothing and gloves.
For emergency responders	Use personal protection recommended in Section 8.

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 containment Prevent further leakage or spillage if safe to do so.

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

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 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.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Do not store together with reductants. Keep only in the original container in a cool, well-ventilated place. Store away from direct heat or sunlight. Store in a dry place. Storage tank vents, especially those fitted with flame arrestors, should be inspected regularly for polymer fouling which can arise from vapor phase polymerization. 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. Do not store together with oxidants. Store at temperatures not exceeding 25 °C/ 77 °F. 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.

7.3. Specific end use(s)

Risk management measures The information required is contained in this Material Safety Data Sheet.
Other guidelines Refer to e-SDS.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Methacrylic acid, diester with triethylene glycol 109-16-0	-	-	skin sensitizer	-	-
Chemical name	Sweden		Switzerland	United Kingdom	
Methacrylic acid, diester with triethylene glycol	-		S+	-	

109-16-0			
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Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Derived No Effect Level (DNEL) - Workers No information available

Chemical name	Oral	Dermal	Inhalation
Methacrylic acid, diester with triethylene glycol 109-16-0	-	13.9 mg/kg bw/day [4] [6]	48.5 mg/m ³ [4] [6]

Derived No Effect Level (DNEL) - General Public No information available

Chemical name	Oral	Dermal	Inhalation
Methacrylic acid, diester with triethylene glycol 109-16-0	8.33 mg/kg bw/day [4] [6]	-	14.5 mg/m ³ [4] [6]

Predicted No Effect Concentration (PNEC) No information available

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Methacrylic acid, diester with triethylene glycol 109-16-0	0.0164 mg/L	0.0164 mg/L	0.00164 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Methacrylic acid, diester with triethylene glycol 109-16-0	0.185 mg/kg sediment dw	0.0185 mg/kg sediment dw	1.7 mg/L	0.0274 mg/kg soil dw	-

8.2. Exposure controls

Engineering controls Ensure that eyewash stations and safety showers are close to the workstation location

**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.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

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

Property	Values	Remarks • Method
Melting / freezing point	-88 °C	OECD Test No. 102/EU Method A.1
Boiling point / boiling range	> 250 °C	OECD Test No. 103/EU Method A.2
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Flash point	> 150.0 °C	EU Method A.9: Closed Cup
Autoignition temperature	255 °C	EU method A.15
Decomposition temperature	No information available	None known
pH	No data available	No information available
pH (as aqueous solution)	No data available	None known
Kinematic viscosity	9.15 mm ² /s @ 20 °C	OECD Test No. 114
Dynamic viscosity	No data available	None known
Water solubility	3.6 g/l @ 20 °C	OECD Test No. 105
Solubility in other solvents	No data available	None known
Partition coefficient:	log Pow = 2.3	OECD Test No. 117/EU Method A.8
n-octanol/water		
Vapor pressure	0.077 Pa @20 °C	by analogy OECD Test No. 104
Relative density	No data available	None known
Bulk density	No data available	
Density VALUE min	1.0760	
Vapor density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

9.2. Other information

Molecular weight 286 g/mol

9.2.1. Information with regard to physical hazard classes

Not applicable

Explosive properties Can polymerize violently
 Oxidizing properties The substance or mixture is not classified as oxidizing

9.2.2. Other safety characteristics

No information available

Evaporation rate No information available

SECTION 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

Stability Stable under normal conditions of handling, use and transportation. Periodic air sparging in

storage will assist long term stability.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions May occur if inhibitor is depleted or if exposed to high temperature.

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

10.4. Conditions to avoid**Conditions to avoid**

Avoid heating. This product contains a peroxidation inhibitor. To maintain inhibitor activity, oxygen must not be eliminated from the atmosphere above the product. 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. Avoid radical forming substances (metal-ions, peroxides).

10.5. Incompatible materials

Incompatible materials Reaction with reducing agents. Reaction with oxidants.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon oxides. Irritating vapors.

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Information on likely routes of exposure****Product Information**

Inhalation None known.

Eye contact May cause slight irritation.

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

Ingestion Low toxicity by this route.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity**Numerical measures of toxicity**

No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 11,528.70 mg/kg

6 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Methacrylic acid, diester with triethylene glycol	= 10837 mg/kg (Rat)	--	--

Delayed and immediate effects as well as chronic effects from short and long-term exposure

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.
Respiratory or skin sensitization	Dermal sensitization: sensitizing. Method. OECD Test No. 429: Skin Sensitization: Local Lymph Node Assay.
Germ cell 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.
STOT - single exposure	The substance or mixture is not classified as specific target organ toxicant, single exposure. (Expert assessment).
STOT - repeated exposure	The substance or mixture is not classified as specific target organ toxicant, repeated exposure. (Expert assessment).
Aspiration hazard	No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Methacrylic acid, diester with triethylene glycol	-	LC50: =16.4mg/L (96h, Danio rerio)	-	-

Acute aquatic toxicity

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

Chronic aquatic toxicity

Fish	No information available
Crustacea	No information available
Bacteria toxicity	No information available

12.2. Persistence and degradability

Persistence and degradability	Readily biodegradable Method OECD Test No. 301B: Ready Biodegradability: CO2 Evolution Test (TG 301 B)
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12.3. Bioaccumulative potential

Bioaccumulation	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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Chemical name	PBT and vPvB assessment
Methacrylic acid, diester with triethylene glycol	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties	This product does not contain any known or suspected endocrine disruptors.
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12.7. Other adverse effects

Other adverse effects	No information available.
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SECTION 13: Disposal considerations**13.1. Waste treatment methods**

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

SECTION 14: Transport information**IATA**

14.1 UN number or ID number	Not regulated
14.2.	
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazard	Not applicable

14.6 Special precautions for user

Special Provisions None

IMDG

14.1 UN number or ID number Not regulated

14.2.

14.3 Transport hazard class(es) Not regulated

14.4 Packing group Not regulated

14.5 Environmental hazard Not applicable

14.6 Special precautions for user

Special Provisions None

14.7 Maritime transport in bulk according to IMO instruments Not applicable

Land transport (ADR/RID)

14.1 UN number or ID number Not regulated

14.2. UN proper shipping name Not regulated

14.3 Transport hazard class(es) Not regulated

14.4 Packing group Not regulated

14.5 Environmental hazard Not applicable

14.6 Special precautions for user

Special Provisions None

ADR:

14.1 UN number or ID number Not regulated

14.2. UN proper shipping name Not regulated

14.3 Transport hazard class(es) Not regulated

14.4 Packing group Not regulated

14.5 Environmental hazard Not applicable

14.6 Special precautions for user

Special Provisions None

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Water hazard class (WGK) slightly hazardous to water (WGK 1)

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorizations and/or restrictions on use: This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)**Persistent Organic Pollutants** Not applicable**Ozone-depleting substances (ODS) regulation (EC) 1005/2009** Not applicable**International Inventories****United States (TSCA)** 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.
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
China (IECSC)	All ingredients are on the inventory or exempt from listing
KECL	All ingredients are on the inventory or exempt from listing
Philippines (PICCS)	All ingredients are on the inventory or exempt from listing
Australia (AICS)	All ingredients are on the inventory or exempt from listing
NZIoC	All ingredients are on the inventory or exempt from listing

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

Canadian Inventory Legend DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EU Inventory Legend EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

Japanese Inventory Legend ENCS - Japan Existing and New Chemical Substances

China Inventory Legend IECSC - China Inventory of Existing Chemical Substances

Korean Inventory Legend KECL - Korean Existing and Evaluated Chemical Substances

Philippines Inventory Legend PICCS - Philippines Inventory of Chemicals and Chemical Substances

Australian Inventory Legend AIIIC - Australian Inventory of Industrial Chemicals

New Zealand Inventory Legend NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

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

SECTION 16: Other information

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

Full text of H-Statements referred to under section 3

H317 - May cause an allergic skin reaction

Legend

SVHC: Substances of Very High Concern for Authorization:

PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances

vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances

Legend

Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitizers		

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapor	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitization	Calculation method
Skin sensitization	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method

Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method
Health hazards not otherwise classified (HHNOC)	Calculation method

Key literature references and sources for data used to compile the SDS

ATSDR Agency for Toxic Substances and Disease Registry (ATSDR)
 CHEMVIEW not translate code U.S. Environmental Protection Agency ChemView Database
 EFSA not translate code European Food Safety Authority (EFSA)
 ECHA RAC European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
 ECHA API European Chemicals Agency (ECHA) (ECHA_API)
 EPA not translate code EPA (Environmental Protection Agency)
 EPA_AEGL not translate code Acute Exposure Guideline Level(s) (AEGL(s))
 EPA_FIFRA not translate code U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 EPA_HPVC not translate code U.S. Environmental Protection Agency High Production Volume Chemicals
 FOOD_JOURN not translate code Food Research Journal
 HSDB not translate code Hazardous Substance Database
 IUCLID not translate code International Uniform Chemical Information Database (IUCLID)
 JAPAN_GHS not translate code National Institute of Technology and Evaluation (NITE)
 NICNAS not translate code Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH not translate code NIOSH (National Institute for Occupational Safety and Health)
 NLM_CIP not translate code National Library of Medicine's ChemID Plus (NLM CIP)
 NLM_PUBMED not translate code National Library of Medicine's PubMed database (NLM PUBMED)
 NTP not translate code National Toxicology Program (NTP)
 NZ_CCID not translate code New Zealand's Chemical Classification and Information Database (CCID)
 OECD_EHSP not translate code Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 OECD_HPVC not translate code Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 OECD_SIDS not translate code Organization for Economic Co-operation and Development Screening Information Data Set
 WHO not translate code World Health Organization

Revision date 2023-Apr-22

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Additional information

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

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet