

SAFETY DATA SHEET

Revision date 2019-May-13

Revision number 1.03

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

1.1 Product identifier

Product name BISOMER[®] PEM 63P HD
Product code 745784
Synonyms Polyalkylene glycol monomethacrylate

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

Recommended use [RU] Monomer for special polymers
Uses advised against None known

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 Corrosion/Irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3

2.2 Label elements

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



Signal word WARNING

Hazard statements

H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H319 - Causes serious eye irritation
 H335 - May cause respiratory irritation
 H351 - Suspected of causing cancer

Precautionary statements

P202 - Do not handle until all safety precautions have been read and understood
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
 P262 - Do not get in eyes, on skin, or on clothing
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Hazard components for labeling

- 2-Hydroxyethyl methacrylate
- 1,4-Dioxane

2.3 Other Information

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Component	EU EINECS	weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	(REACH) Regulation (EC 1907/2006)
Polyalkylene glycol monomethacrylate 58916-75-9	Not applicable	>= 70%	Eye Irrit. 2 (H319) STOT SE 3 (H335) Skin Irrit. 2 (H315)	In compliance
2-Hydroxyethyl methacrylate 868-77-9	212-782-2	>= 1 - < 5%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317)	Registration Number 01-2119490169-29-0002
Dioxane 123-91-1	204-661-8	>= 1 - < 5%	Eye Irrit. 2 (H319) Carc. 2 (H351) STOT SE 3 (H335) Flam. Liq. 2 (H225) (EUH066) (EUH019)	In compliance

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

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)**

Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters****Occupational exposure limit value**

Component	European Union	United Kingdom	Spain	Germany
2-Hydroxyethyl methacrylate 868-77-9	NAV	NAV	NAV	NAV
Dioxane 123-91-1	NAV	TWA: 20 ppm; 73 mg/m ³ Skin STEL: 60 ppm; 219 mg/m ³	TWA: 20 ppm; 73 mg/m ³	TWA MAK: 20 ppm; 73 mg/m ³ skin notation Peak: 40 ppm; 146 mg/m ³
Component	Ireland	France	Italy	Portugal
Dioxane 123-91-1	Skin TWA: 20 ppm; 73 mg/m ³	STEL: 40 ppm; 140 mg/m ³ TWA: 20 ppm; 73 mg/m ³	NAV	TWA: 20 ppm TWA: 73 mg/m ³ Skin
Component	Austria	Belgium	Switzerland	Poland
Dioxane 123-91-1	STEL: 40 ppm; 146 mg/m ³ TWA: 20 ppm; 73 mg/m ³ Skin	TWA: 20 ppm; 73 mg/m ³ Skin	STEL: 40 ppm; 144 mg/m ³ skin notation TWA: 20 ppm; 72 mg/m ³	TWA: 50 mg/m ³

Component	Finland	Norway	Denmark	Netherlands
2-Hydroxyethyl methacrylate 868-77-9	NAV	STEL: 2 ppm; 11 mg/m ³ TWA: 2 ppm; 11 mg/m ³	NAV	NAV
Dioxane 123-91-1	STEL: 40 ppm; 150 mg/m ³ Skin TWA: 25 ppm; 91 mg/m ³	STEL: 10 ppm; 36 mg/m ³ Skin TWA: 5 ppm; 18 mg/m ³	Skin TWA: 10 ppm; 36 mg/m ³	20 mg/m ³ TWA

Biological limit values

Component	European Union	United Kingdom	Spain	Germany
2-Hydroxyethyl methacrylate 868-77-9	NAV	NAV	NAV	NAV
Dioxane 123-91-1	NAV	NAV	NAV	400 mg/g urine end of shift 2-Hydroxyethoxyacetic acid measured as mg/g Creatinine

Component	Italy	France	Switzerland	Denmark
Dioxane 123-91-1	NAV	NAV	400 mg/g creatinine urine end of shift 2-Hydroxy-ethoxyacetic acid	NAV

Legend

NAV - Not available

8.2 Exposure controls**Personal Protective Equipment****Eye/face Protection**

If splashes are likely to occur: Chemical 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

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 to yellow
Appearance	clear
Odor	No information available
Odor threshold	No information available

Property	Values	Remarks
pH	No information available	No information available

Melting / freezing point	No information available	No information available
Boiling point / boiling range	100.0 °C / 212.0 °F	PH. EUR. IV 2.2.12
Flash point	> 80.0 °C / > 176.0 °F	CC (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	No information available	No information available
Vapor density	No information available	No information available
Specific gravity	No information available	No information available
Solubility (water)	partially soluble	No information available
Solubility in other solvents	No information available	No information available
Partition coefficient: n-octanol/water	No information available	No information available
Autoignition temperature	No information available	No information available
Decomposition temperature	No information available	No information available
Kinematic viscosity	No information available	No information available
Dynamic viscosity	No information available	No information available
Density	1.0790 g/cm ³ @ 20.0 °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	524 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. Dioxanes. Irritating vapors.

11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute health hazard****Eye contact**

Causes serious eye irritation.

Skin contact

Irritating to skin. May cause an allergic skin reaction.

Ingestion

May be harmful if large amounts are swallowed.

Inhalation

Inhalation of mist or vapor may cause respiratory tract irritation.

Acute toxicity - Product Information

Oral LD50	> 2,000 mg/kg
Dermal LD50	No information available
Inhalation LC50	No information available

Acute toxicity - Component Information

Component	Oral LD50	Dermal LD50	Inhalation LC50
2-Hydroxyethyl methacrylate 868-77-9 (>= 1 - < 5%)	> 5000 mg/kg	> 5000 mg/kg	--
Dioxane 123-91-1 (>= 1 - < 5%)	= 5170 mg/kg (Rat)	= 7600 mg/kg (Rabbit)	= 46 mg/L (Rat) 2 h

Skin corrosion/irritation

Irritating

Serious eye damage/eye irritation

Irritating

Sensitization

Dermal sensitization: sensitizing

Germ cell mutagenicity

No information available

Carcinogenicity

May cause cancer

Reproductive toxicity

No information available

Specific target organ toxicity - Single exposure

Irritating to respiratory system.

Specific target organ toxicity - Repeated exposure

No information available

Aspiration hazard

No information available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

- The ecological evaluation of the product is based on data from the raw material and/or comparable substances. 70% of the mixture consists of components of unknown hazards to the aquatic environment.

Acute aquatic toxicity - Product Information

Fish No information available

Crustacea No information available

Algae/aquatic plants No information available

Acute aquatic toxicity - Component Information

Component	Algae/aquatic plants	Fish	Toxicity to daphnia and other aquatic invertebrates
2-Hydroxyethyl methacrylate 868-77-9 (>= 1 - < 5%)	--	LC50 (96 h flow-through) 213 - 242 mg/L (Pimephales promelas) LC50 (96 h) = 227 mg/L (Pimephales promelas)	--
Dioxane 123-91-1 (>= 1 - < 5%)	--	LC50 (96 h static) > 10000 mg/L (Lepomis macrochirus) LC50 (96 h semi-static) > 10000 mg/L (Lepomis macrochirus) LC50 (96 h static) 10306 - 14742 mg/L (Pimephales promelas) LC50 (96 h flow-through) = 9850 mg/L (Pimephales promelas)	EC50 (48 h Static) = 163 mg/L (water flea)

12.2 Persistence and degradability**Persistence and degradability**

No information available

Ultimate biodegradation

The total of the organic components contained in the product achieve values below 60% BOD/COD or CO₂ liberation, or below 70% DOC reduction in tests for ease of degradability. Threshold values for 'readily degradable' (e.g. to OECD method 301) are not reached.

12.3 Bioaccumulative potential

Bioaccumulative potential

No information available

12.4 Mobility in soil

Mobility

No information available

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment

No information available

12.6 Other adverse effects

Other information

No other ecological studies have been carried out on this product.

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)**

Some ingredients are not on the inventory.

Canada (DSL)

Some ingredients are not on the inventory.

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)

Some ingredients are not on the inventory.

South Korea (KECL)

Some ingredients are not on the inventory.

Philippines (PICCS)

Some ingredients are not on the inventory.

United States (TSCA)

Some ingredients are not on the inventory.

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**

No information available.

16. OTHER INFORMATION**Product code** 745784**Revision date** 2019-May-13

Full text of H-Statements referred to under sections 2 and 3

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

H351 - Suspected of causing cancer

H225 - Highly flammable liquid and vapor

EUH019 - May form explosive peroxides

EUH066 - Repeated exposure may cause skin dryness or cracking

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

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.