SAFETY DATA SHEET

Revision date 2022-Aug-22 **Revision number** 1.15

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

1.1 Product identifier

Product name BISOMER® HEMA
Product code 745757
Synonyms 2-Hydroxyethyl methacrylate
REACH registration number 01-2119490169-29-0002

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

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

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

Precautionary statements
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

Contains: 2-Hydroxyethyl methacrylate, (Non-stabilized)
Hazard components for labeling • 2-Hydroxyethyl methacrylate

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)
2-Hydroxyethyl methacrylate 868-77-9	212-782-2	> 97%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317)	Registration Number 01-2119490169-29-0002

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
Remove contact lenses, if worn. Immediately flush with plenty of water for at least 10 minutes, holding eyelids apart to ensure flushing of the entire surface. Seek medical advice immediately.

Skin contact
Wash off immediately with soap and plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

Ingestion
If swallowed: Drink 1 or 2 glasses of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

Inhalation
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Most important symptoms and effects
No information available.

Chronic effects
Repeated or prolonged exposure may result in liver or kidney damage.

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
Avoid contact with eyes, skin and clothing
Avoid breathing vapors or mists
Use only in well-ventilated areas
Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing.
Wash thoroughly after handling
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 reductants.
Do not store together with oxidants.

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
2-Hydroxyethyl methacrylate 868-77-9	NAV	NAV	NAV	NAV

Component	Finland	Norway	Denmark	Netherlands
2-Hydroxyethyl methacrylate 868-77-9	NAV	STEL: 2 ppm; 11 mg/m³ TWA: 2 ppm; 11 mg/m³	NAV	NAV

Biological limit values

Component	European Union	United Kingdom	Spain	Germany
2-Hydroxyethyl methacrylate 868-77-9	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
2-Hydroxyethyl methacrylate	workers	Skin contact	Chronic effects		1.3 mg/kg	
2-Hydroxyethyl methacrylate	workers	Inhalation	Chronic effects		4.9 mg/m³	
2-Hydroxyethyl methacrylate	consumers	Skin contact	Chronic effects		0.83 mg/kg	
2-Hydroxyethyl methacrylate	consumers	Inhalation	Chronic effects		2.9 mg/m³	
2-Hydroxyethyl methacrylate	consumers	Ingestion	Chronic effects		0.83 mg/kg	

Predicted No Effect Concentration (PNEC)				
Name on List	Environmental Compartment	Exposure Time	Values	Remarks
2-Hydroxyethyl methacrylate	Fresh water		0.482 mg/L	
2-Hydroxyethyl methacrylate	Marine water		0.482 mg/L	
2-Hydroxyethyl methacrylate			10 mg/L	PNEC STP
2-Hydroxyethyl methacrylate			1 mg/L	PNEC Aqua (intermittent release)
2-Hydroxyethyl methacrylate	Fresh water sediment		3.79 mg/kg	
2-Hydroxyethyl methacrylate	Marine sediment		3.79 mg/kg	
2-Hydroxyethyl methacrylate	Soil		0.476 mg/kg	

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
Appearance	clear
Odor	characteristic
Odor threshold	No information available

Property	Values	Remarks
pH	< 7.0	No information available

Melting / freezing point	No information available	No information available
Boiling point / boiling range	213 °C / 415 °F	OECD Test No. 103
Flash point	106 °C / 222 °F	Directive 84/449/EEC, A.9
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	0.08 mbar	OECD Test No. 104
Vapor density	>= 1	No information available
Specific gravity	No information available	No information available
Solubility (water)	> 100 g/L @ 20 °C	No information available
Solubility in other solvents	No information available	No information available
Partition coefficient: n-octanol/water	0.42 @ 25 °C	OECD Test No. 107
Autoignition temperature	375 °C / 707 °F	Directive 84/449/EEC, A.15
Decomposition temperature	No information available	No information available
Kinematic viscosity	No information available	No information available
Dynamic viscosity	6 mPa s @ 20 °C	OECD Test No. 114
Density	1.0720 g/cm ^{3}	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	130 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 reducing agents. Reaction with oxidants. Acids or alkalies. Free radical producing initiators. Primary and Secondary Amines.

10.6 Hazardous decomposition products

Hazardous decomposition products
Carbon monoxide. Carbon dioxide. Irritating vapors.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute health hazard

Eye contact
Causes eye irritation.

Skin contact
May cause sensitization by skin contact.

Ingestion
May be harmful if swallowed.

Inhalation
Vapors may be irritating.

Acute toxicity

Oral LD50	> 5000 mg/kg (Experiment)
Dermal LD50	> 5000 mg/kg (Experiment)
Inhalation LC50	No information available

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

Serious eye damage/eye irritation
Irritating
Method: OECD Test No. 405: Acute Eye Irritation/Corrosion

Sensitization
Dermal sensitization: sensitizing (Experiment)

Germ cell mutagenicity

No information available

Mutagenicity
In vitro mutagenicity: not mutagenic
Method: OECD Test No. 471: Bacterial Reverse Mutation Test

Carcinogenicity
Not classifiable as a human carcinogen
Method: OECD Test No. 451: Carcinogenicity Studies

Reproductive toxicity
No toxicity to reproduction
Method: OECD Test No. 416: Two-Generation Reproduction Toxicity

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 aspiration toxicity classification (Expert assessment)

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute aquatic toxicity

Fish	LC50 (96 hour) > 100 mg/L Method: OECD Test No. 203: Fish, Acute Toxicity Test
Crustacea	EC50 (48 hour): 380 mg/L (*Daphnia magna*) Method: OECD Test No. 202: Daphnia sp., Acute Immobilization Test
Algae/aquatic plants	EC50 (72 hour): 836 mg product/L. Method: OECD 201 / DIN 38412, part 9

Chronic aquatic toxicity

Fish	NOEC > 10 - <= 100 mg product/L. (analogy)
Crustacea	NOEC > 10 - <= 100 mg product/L Method: OECD Test No. 211: Daphnia magna Reproduction Test
Bacteria toxicity	EC50: 2204 mg/L. Method: Chronic bacterial toxicity according to test method DIN 38 412

12.2 Persistence and degradability

Persistence and degradability
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). (Expert assessment)

Ultimate biodegradation
Readily and rapidly degradable. All organic substances contained in the product achieve > 60% BOD/COD or CO2 liberation, or > 70% DOC reduction in tests for ease of degradability. Threshold values for 'readily degradable' (e.g. to OECD method 301) are reached.

12.3 Bioaccumulative potential

Bioaccumulative potential

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). (Expert assessment)

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

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal of wastes
Dispose of according to regulations.

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.

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

National Regulations

Germany - Water Classification (VwVwS)
WGK 1

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 745757

Revision date 2022-Aug-22

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

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.