

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2015/830 Issue date: 6/23/2023 Revision date: 1/23/2024 Version: 2.0

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

1.1. Product identifier

Product form : Substance Substance name : BIMAX® HEMA

Chemical name : 2-HYDROXYETHYL METHACRYLATE

IUPAC name : 2-hydroxyethyl methacrylate

EC Index-No. : 607-124-00-X EC-No. : 212-782-2 CAS-No. : 868-77-9 Product code : 9022

Type of product : Intermediate chemical

Formula : C6H10O3
Product group : Trade product
Chemical family : METHACRYLATE

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Chemical intermediate

Laboratory chemicals

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

GELEST, INC.

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1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 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 H315
Serious eye damage/eye irritation, Category 2 H319
Skin sensitisation, Category 1 H317

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

Adverse physicochemical, human health and environmental effects

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.

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2.2. Label elements

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

Hazard pictograms (CLP)



GHS07

Signal word (CLP) : Warning

Hazard statements (CLP) : H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction. H319 - Causes serious eye irritation.

Precautionary statements (CLP) : P280 - Wear protective gloves, protective clothing, eye protection.

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray. P302+P352 - IF ON SKIN: Wash with plenty of water.

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

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy to do. Continue rinsing. P337+P313 - If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

 Substance type
 : Mono-constituent

 Name
 : BIMAX® HEMA

 CAS-No.
 : 868-77-9

 EC-No.
 : 212-782-2

 EC Index-No.
 : 607-124-00-X

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2-hydroxyethyl methacrylate	CAS-No.: 868-77-9 EC-No.: 212-782-2 EC Index-No.: 607-124-00-X	> 99	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317
Diethylene glycol monomethacrylate	CAS-No.: 2351-43-1	≤ 0.5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 STOT SE 3, H336 STOT SE 3, H335
Ethylene glycol dimethacrylate	CAS-No.: 97-90-5 EC-No.: 202-617-2 EC Index-No.: 607-114-00-5	≤ 0.2	Skin Sens. 1, H317 STOT SE 3, H335

Specific concentration limits:		
Name	Product identifier	Specific concentration limits
Ethylene glycol dimethacrylate	CAS-No.: 97-90-5 EC-No.: 202-617-2 EC Index-No.: 607-114-00-5	(10 ≤ C ≤ 100) STOT SE 3, H335

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

3.2. Mixtures

Not applicable

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SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash

occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy

to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.

Symptoms/effects after eye contact : Eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained

breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with skin and eyes.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Avoid breathing

dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information

refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment. Avoid breathing dust/fume/gas/mist/vapours/spray.

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Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the

product. Contaminated work clothing should not be allowed out of the workplace. Wash

contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place.

Incompatible materials : Free radical intiators. Oxidizing agents. Reducing agents. Iron.

Storage temperature : < 32 °C (Recommended)

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

No additional information available

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

BIMAX® HEMA (868-77-9)		
DNEL/DMEL (Workers)		
Long-term - systemic effects, dermal	1.3 mg/kg bodyweight/day	
Long-term - systemic effects, inhalation	4.9 mg/m³	
DNEL/DMEL (General population)		
Long-term - systemic effects,oral	0.83 mg/kg bodyweight/day	
Long-term - systemic effects, inhalation	2.9 mg/m³	
Long-term - systemic effects, dermal	0.83 mg/kg bodyweight/day	
PNEC (Water)		
PNEC aqua (freshwater)	0.482 mg/l	
PNEC aqua (marine water)	0.482 mg/l	
PNEC aqua (intermittent, freshwater)	1 mg/l	
PNEC aqua (intermittent, marine water)	1 mg/l	
PNEC (Sediment)		
PNEC sediment (freshwater)	3.79 mg/kg dwt	
PNEC sediment (marine water)	3.79 mg/kg dwt	
PNEC (Soil)		
PNEC soil	0.476 mg/kg dwt	
PNEC (STP)		
PNEC sewage treatment plant	10 mg/l	

8.1.5. Control banding

No additional information available

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8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

8.2.2.1. Eye and face protection

Eve protection:

Chemical goggles or face shield

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

Colour

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Clear, colorless Liquid. Appearance

130.14 g/mol Source: ChemIDplus Molecular mass Colourless.

: Ester-like. Odour : No data available Odour threshold : No data available рΗ Relative evaporation rate (butylacetate=1) : No data available : No data available Melting point Freezing point : No data available Boiling point : 95 °C @ 10 mmHg : 97 °C Source: ICSC Flash point Auto-ignition temperature : 375 °C Source: ECHA Decomposition temperature : No data available Flammability (solid, gas) : Not applicable

Vapour pressure : 0.08 mm Hg Temp.: 20 °C Relative vapour density at 20°C : 4.5 Source: ICSC : 1.034 Source: HSDB Relative density : 1.073 g/cm3 Temp.: 25 °C Density

Solubility : Soluble.

Water: 100000 mg/l at 25 °C Source: ChemIDplus

Partition coefficient n-octanol/water (Log Pow) : No data available Viscosity, kinematic : 6.337 mm²/s Viscosity, dynamic : 6.8 cP @20C Explosive properties : No data available : No data available Oxidising properties **Explosive limits** : No data available

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9.2. Other information

Other properties : Self-accelerating Polymerization Temperature (SAPT) = 75°C (tested according to UN Test

H.4).

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions. Contains the following stabilizer(s): MEHQ.

10.3. Possibility of hazardous reactions

Hazardous polymerization can occur at temperatures ≥ 75 °C.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ultraviolet light.

10.5. Incompatible materials

Free radical intiators. Oxidizing agents. Reducing agents. Iron.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Addictoriony (initialation)	. Not diagonicu
2-hydroxyethyl methacrylate (868-77-9	9)
LD50 oral rat	5564 mg/kg bodyweight Animal: rat
LD50 dermal rabbit	> 5000 mg/kg bodyweight Animal: rabbit, Animal sex: male
Ethylene glycol dimethacrylate (97-90	-5)
LD50 oral rat	3300 mg/kg Source: National Library of Medicine
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: EPA OPPTS 870.1200 (Acute Dermal Toxicity), Remarks on results: other:
Skin corrosion/irritation	: Causes skin irritation.
Camiana and damage of implementations	Course conjects and implesting

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified Carcinogenicity : Not classified Reproductive toxicity : Not classified STOT-single exposure : Not classified

Ethylene glycol dimethacrylate (97-90-5)

STOT-single exposure May cause respiratory irritation.

Diethylene glycol monomethacrylate (2351-43-1)

STOT-single exposure May cause drowsiness or dizziness. May cause respiratory irritation.

STOT-repeated exposure : Not classified

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2-hydroxyethyl methacrylate (868-77-9)		
LOAEC (inhalation, rat, gas, 90 days)	350 ppm Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study), Remarks on results: other:	
NOAEC (inhalation, rat, gas, 90 days)	100 ppm Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study), Remarks on results: other:	
Ethylene glycol dimethacrylate (97-90-5)		
LOAEC (inhalation, rat, gas, 90 days)	350 ppm Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)	
Aspiration hazard :	Not classified	
BIMAX® HEMA (868-77-9)		
Viscosity, kinematic	6.337 mm²/s	

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse

effects in the environment.

: Not classified

 $\label{thm:local_equation} \mbox{Hazardous to the aquatic environment, short-term}$

(acute)

Hazardous to the aquatic environment, long–term : Not classified

(chronic)

•	
2-hydroxyethyl methacrylate (868	8-77-9)
LC50 - Fish [1]	> 100 mg/l Test organisms (species): Oryzias latipes
EC50 - Crustacea [1]	380 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	836 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	345 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
LOEC (chronic)	49.6 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	24.1 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
Ethylene glycol dimethacrylate (97-90-5)
LC50 - Fish [1]	15.95 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	44.9 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	17.3 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	19 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [2]	10.1 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
NOEC (chronic)	5.05 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

2-hydroxyethyl methacrylate (868-77-9)	
Partition coefficient n-octanol/water (Log Pow)	0.42 Source: ICSC

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Partition coefficient n-octanol/water (Log Pow) 1.87 Source: International Chemical Safety Cards

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 3532	UN 3532	UN 3532	UN 3532	UN 3532
14.2. UN proper shippin	g name			
POLYMERIZING SUBSTANCE, LIQUID, STABILIZED, N.O.S.	POLYMERIZING SUBSTANCE, LIQUID, STABILIZED, N.O.S.	Polymerizing substance, liquid, stabilized, n.o.s.	POLYMERIZING SUBSTANCE, LIQUID, STABILIZED, N.O.S.	POLYMERIZING SUBSTANCE, LIQUID, STABILIZED, N.O.S.
Transport document descr	iption			
UN 3532 POLYMERIZING SUBSTANCE, LIQUID, STABILIZED, N.O.S. (2- HYDROXYETHYL METHACRYLATE), 4.1, III, (D)	UN 3532 POLYMERIZING SUBSTANCE, LIQUID, STABILIZED, N.O.S. (2- HYDROXYETHYL METHACRYLATE), 4.1, III	UN 3532 Polymerizing substance, liquid, stabilized, n.o.s. (2- hydroxyethyl methacrylate), 4.1, III	UN 3532 POLYMERIZING SUBSTANCE, LIQUID, STABILIZED, N.O.S. (2- HYDROXYETHYL METHACRYLATE), 4.1, III	UN 3532 POLYMERIZING SUBSTANCE, LIQUID, STABILIZED, N.O.S. (2- HYDROXYETHYL METHACRYLATE), 4.1, II
14.3. Transport hazard o	class(es)			
4.1	4.1	4.1	4.1	4.1
14.4. Packing group				
III	III	III	III	III
14.5. Environmental haz	ards			
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No

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14.6. Special precautions for user

Overland transport

Classification code (ADR) : PM1

Special provisions (ADR) : 274, 386, 676

Limited quantities (ADR) : 0
Excepted quantities (ADR) : E0

Packing instructions (ADR) : P001, IBC03
Special packing provisions (ADR) : PP93, B19
Portable tank and bulk container instructions (ADR) : T7

Portable tank and bulk container special provisions : TP4, TP6

(ADR)

Tank code (ADR) : L4BN(+)
Tank special provisions (ADR) : TU30, TE11

Vehicle for tank carriage : AT
Transport category (ADR) : 2
Special provisions for carriage - Packages (ADR) : V1

Special provisions for carriage - Loading, unloading : CV15, CV22

and handling (ADR)

Hazard identification number (Kemler No.) : 40

Orange plates :

40 3532

Tunnel restriction code (ADR) : D

Transport by sea

: 274, 386 Special provisions (IMDG) Limited quantities (IMDG) : 0 Excepted quantities (IMDG) : E0 Packing instructions (IMDG) : P001 : PP93 Special packing provisions (IMDG) IBC packing instructions (IMDG) IBC03 IBC special provisions (IMDG) B19 Tank instructions (IMDG) T7 Tank special provisions (IMDG) TP4, TP6 EmS-No. (Fire) F-J : S-G EmS-No. (Spillage) Stowage category (IMDG) : D Stowage and handling (IMDG) : SW1

Properties and observations (IMDG) : Polymerizes at elevated temperatures or in a fire. Burns vigorously. Immiscible with water.

SG35, SG36

Contact with alkalis or acids may cause dangerous polymerization. The products of

combustion or self-accelerating polymerization may be toxic by inhalation.

Air transport

Segregation (IMDG)

PCA Excepted quantities (IATA) : E0 PCA Limited quantities (IATA) Forbidden PCA limited quantity max net quantity (IATA) Forbidden PCA packing instructions (IATA) 459 PCA max net quantity (IATA) 10L CAO packing instructions (IATA) 459 CAO max net quantity (IATA) 25L Special provisions (IATA) : A209 ERG code (IATA) 3L

Inland waterway transport

Classification code (ADN) : PM1

Special provisions (ADN) : 274, 386, 676

Limited quantities (ADN) : 0
Excepted quantities (ADN) : E0
Equipment required (ADN) : PP

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Number of blue cones/lights (ADN) : 0

Rail transport

Classification code (RID) : PM1

Special provisions (RID) : 274, 386, 676

Limited quantities (RID) : 0

Excepted quantities (RID) : E0

Packing instructions (RID) : P001, IBC03
Special packing provisions (RID) : PP93, B19
Portable tank and bulk container instructions (RID) : T7

Portable tank and bulk container special provisions

(RID)

Tank codes for RID tanks (RID) : L4BN(+)
Special provisions for RID tanks (RID) : TU30, TE11

Transport category (RID) : 2
Special provisions for carriage – Packages (RID) : W7
Special provisions for carriage - Loading, unloading : CW22

and handling (RID)

Colis express (express parcels) (RID) : CE6
Hazard identification number (RID) : 40

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

: TP4, TP6

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

EU restriction list (REACH Annex XVII)		
Reference code	Applicable on	Entry title or description
3(b)	BIMAX® HEMA ; 2- hydroxyethyl methacrylate ; Ethylene glycol dimethacrylate ; Diethylene glycol monomethacrylate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

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15.1.2. National regulations

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemcial Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Full text of H- and EUH-statements:		
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2	
H315	Causes skin irritation.	
H317	May cause an allergic skin reaction.	
H319	Causes serious eye irritation.	
H335	May cause respiratory irritation.	
H336	May cause drowsiness or dizziness.	
Skin Irrit. 2	Skin corrosion/irritation, Category 2	
Skin Sens. 1	Skin sensitisation, Category 1	
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	

SDS EU (REACH Annex II) - Custom v22

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