Safety data sheet

Gießharz Elastic

Uniprox Safety data sheet in accordance with regulation (EC) 1907/2006
Product: Gießharz Elastic
Date/ Revised: 12.10.2021
Document-No.: MG116_Gießharz_Elastic_006_EN

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1. Substance/preparation and company identification

Trade name: Gießharz Elastic (MG116)
Application of the substance/ the preparation: Resin for orthopaedic technology

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2. Hazards Identification

2.1. Classification of the substance or mixture

The product has been classified according to the legislation in force.
Classification according to Regulation (EC) No 1272/2008 as amended.

Physical Hazards

Flammable liquids	Category 2	H225	Highly flammable liquid and vapor.

Health Hazards

Skin irritation	Category 2	H315	Causes skin irritation.
Skin sensitisation	Category 1	H317	May cause an allergic skin reaction.
Specific target organ toxicity - single exposure (Respiratory system)	Category 3	H335	May cause respiratory irritation.

2.2. Label elements

Contains: methyl methacrylate; CAS-No.: 80-62-6
ethylene di(S-thioacetate); CAS-No.: 123-81-9

Signal word Danger

GHS pictogram

Hazard statement

H225 - Highly flammable liquid and vapour.
H315 - Causes skin irritation.
H317 - May causes an allergic skin reaction.

H335 - May causes respiratory irritation.

Precautionary Statement (Prevention)

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P261 Avoid breathing dust/ fume/ gas / mist/ vapours / spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves / eye protection/ face protection.

(Response)

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.
P370+P378: In case of fire: Use carbon dioxide for extinction.

2.3. Other hazards

Other hazards

Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions. Take precautionary measures against static discharges.

Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Endocrine disrupting properties-Toxicity

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Endocrine disrupting properties-Ecotoxicity

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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3. Composition/Information on Ingredients

3.2. Mixtures

General information: preparation

Chemical Name	CAS-No. EINECS-No REACH-No.	Concentration	M-Factor	Notes
methyl methacrylate	80-62-6 201-297-1 01-2119452498-28	20- < 50 %	No data available.	#

triethyleneglycol dimethacrylate	109-16-0 203-652-6 01-2119452498-28	1 - < 5%	No data available.	
ethylene di (S-thioacetate)	123-81 -9 204-653-4 01-2120775150-61	0,1- < 1%	No data available.	
n-butyl acrylate	141-32 -2 205-480-7 01-2119453155-43	0,1- < 1%	No data available.	#
N,N-bis-(2-hydroxypropyl)-p-toluidine	38668-48-3 254-075-1 01-2119980937-17	0,1- < 1%	No data available.	

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
# This substance has workplace exposure limit(s).
This substance is listed as SVHC

Classification

Chemical name	Classification	Notes
Methyl methacrylate	Classification: Flam. Liq.: 2: H225; Skin Irrit.: 2: H315; Skin Sens.: 1B: H317; STOT SE: 3: H335; Supplemental label information: None known. Specific concentration limit: Specific target organ toxicity - single exposure Category 3, >= 10 % Acute toxicity, oral: LD 50: > 5,000 mg/kg Acute toxicity, inhalation: LC 50: 29.8 mg/l Acute toxicity, dermal: LD 50: > 5,000 mg/kg	Note D
triethyleneglycol dimethacrylate	Classification: Skin Sens.: 1B: H317; Supplemental label information: None known. Specific concentration limit: None known. Acute toxicity, oral: LD 50: > 5,000 mg/kg Acute toxicity, inhalation: None known. Acute toxicity, dermal: LD 50: > 2,000 mg/kg	No data available
ethylene di(S-thioacetate)	Classification: Acute Tox.: 4: H302; Acute Tox.: 4: H332; Acute Tox.: 4: H332; Eye Irrit.: 2: H319; Skin Sens.: 1A: H317; STOT SE: 3: H335 Supplemental label information: None known. Specific concentration limit: None known. Acute toxicity, oral: LD 50: 303 mg/kg Acute toxicity, inhalation: LC 50: 1.5 mg/l Acute toxicity, dermal: LD 50: > 2,000 mg/kg	No data available
n-butyl acrylate	Classification: Flam. Liq.: 3: H226; Acute Tox.: 4: H332; Skin Irrit.: 2: H315; Eye Irrit.: 2: H319; Skin Sens.: 1B: H317; STOT SE: 3: H335; Aquatic Chronic: 3: H412 Supplemental label information: None known. Specific concentration limit: None known. Acute toxicity, oral: LD 50: 3,150 mg/kg Acute toxicity, inhalation: LC 50: 10.3 mg/l Acute toxicity, dermal: LD 50: > 2,000 mg/kg	Note D
N,N-bis-(2-hydroxypropyl)-p-toluidine	Classification: Acute Tox.: 2: H300; Eye Irrit.: 2: H319; Aquatic Chronic: 3: H412 Supplemental label information: None known. Specific concentration limit: None known. Acute toxicity, oral: LD 50: 25 mg/kg Acute toxicity, inhalation: None known. Acute toxicity, dermal: LD 50: > 2,000 mg/kg	No data available

CLP: Regulation No. 1272/2008.
The full text for all H-statements is displayed in section 16.

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4. First-aid measures

General:	Medical treatment is necessary if symptoms occur which are obviously caused by skin or eye contact with the product or by inhalation of its vapours. Take off all contaminated clothing immediately.
4.1. Description of first aid measures	
Inhalation	Move subject to fresh air and keep him calm. Seek medical advice.
Skin contact	Wash off immediately with soap and water. If skin irritation occurs consult a physician.
Eye contact	Flush eyes thoroughly with a large amount of water and consult a physician.
Ingestion	Do not induce vomiting. Consult a physician immediately.
4.2. Most important symptoms and effects, both acute and delayed	Skin sensitizer. Causes skin and eye irritation. Excessive or prolonged exposure can cause the following: Headache, confusion
4.3. Indication of any immediate medical attention and special treatment needed	
Hazards:	No data available.
Treatment:	no

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5. Fire-fighting measures

5.1. Extinguishing media	
Suitable extinguishing media	foam, dry chemical, carbon dioxide, water spray
Unsuitable extinguishing media	high volume water jet.
5.2. Special hazards arising from the substance or mixture	May be released in case of fire: carbon monoxide, carbon dioxide, organic products of decomposition.
5.3. Advice for firefighters	
Special firefighting procedures	Keep away from sources of ignition - No smoking. Take action to prevent static discharges. In the event of fire, cool the endangered containers with water. When heated above the flash point and/or during spraying (atomizing), ignitible mixtures may form in air. Use explosion-proof equipment.
Special protective equipment for fire-fighters:	Wear self-contained breathing apparatus.

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6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	Assure sufficient ventilation. Keep away sources of ignition. Use personal protective clothing. Use breathing apparatus if exposed to vapours/ dust/ mist/ aerosol.
6.1.1 For non-emergency personnel	No data available.
6.1.2 For emergency responders	No data available.
6.2. Environmental precautions	Prevent product from getting into drains/ surface water/ groundwater.
6.3. Methods and material for	

containment and cleaning up	Larger quantities: Remove mechanically (by pumping). Use explosion-proof equipment! Smaller quantities and/or residues: Contain with absorbent material (e.g. sand, diatomaceous earth, acid absorbent, universal absorbent or sawdust). Dispose of in accordance with regulations.
6.4. Reference to other sections	For personal protection see section 8. For disposal considerations see section 13

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7. Handling and storage

7.1. Precautions for safe handling

Do not breathe vapors. Avoid contact with skin and eyes. Keep away from sources of ignition - No smoking. Take action to prevent static discharges. In the event of fire, cool the endangered containers with water. When heated above the flash point and/or during spraying (atomizing), ignitible mixtures may form in air. Use explosion-proof equipment. Ensure there is good room ventilation. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from direct sunlight. Keep only in the original container at a temperature not exceeding 25 °C. Protect from the action of light. Fill the container by approximately 90 % only as oxygen (air) is required for stabilisation. With large storage containers make sure the oxygen (air) supply is sufficient to ensure stability.

7.3. Specific end use(s)

No data available.

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8. Exposure Controls/Personal Protection

8.1. Control parameters

Occupational Exposure Limits

Chemical name	Type	Exposure Limit Values	Source
Methyl methacrylate	TWA	50 ppm 208 mg/m³	UK. EH40 Workplace Exposure Limits (WELs) (12 2011)
	STEL	100 ppm 416 mg/m³	UK. EH40 Workplace Exposure Limits (WELs) (12 2011)
	TWA	50 ppm	EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU (02 2017)
	STEL	100 ppm	EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU (02 2017)
	STEL 15 minutes	100 ppm 416 mg/m³	UK. EH40 Workplace Exposure Limits (WELs), as amended (01 2020)
n-butyl acrylate	TWA	1 ppm 5 mg/m³	UK. EH40 Workplace Exposure Limits (WELs) (12 2011)

	STEL 15 minutes	5 ppm 26 mg/m³	UK. EH40 Workplace Exposure Limits (WELs) (12 2011)
	TWA	2 ppm 11 mg/m³	EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU (12 2009)
	STEL	10 ppm 53 mg/m³	EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU (12 2009)

Exposure guidelines

Chemical name	Type	Source
Methyl methacrylate	Time Weighted Average (TWA): Indicative	EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended
	Short Term Exposure Limit (STEL): Indicative	EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended
n-butyl acrylate	Time Weighted Average (TWA): Indicative	EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended
	Short Term Exposure Limit (STEL): Indicative	EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

DNEL-Values

Remarks: DNEL-Values

Critical component	Type	Route of Exposure	Health Warnings	Remarks
Methyl methacrylate	Workers	Inhalation	Local, long-term; 208 mg/m³	Repeated dose toxicity
	General population	Inhalation	Local, long-term; 104 mg/m³	Repeated dose toxicity
	Workers	Dermal	Local, long-term; 1.5 mg/cm²	Skin sensitization
	General population	Dermal	Local, long-term; 1.5 mg/cm²	Skin sensitization
	Workers	Dermal	Systemic, long-term; 13.67 mg/kg bw/day	Repeated dose toxicity
	General population	Dermal	Systemic, long-term; 8.2 mg/kg bw/day	Repeated dose toxicity
	Workers	Inhalation	Systemic, long-term; 208 mg/m³	Repeated dose toxicity
	General population	Dermal	Local, short-term; 1.5 mg/cm²	Skin sensitization
	General population	Inhalation	Systemic, long-term; 74.3 mg/m³	Repeated dose toxicity
	Workers	Dermal	Local, short-term; 1.5 mg/cm²	Skin sensitization

triethyleneglycol dimethacrylate	Workers	Dermal	Systemic, long-term; 13.9 mg/kg bw/day	Repeated dose toxicity

	General population	Inhalation	Systemic, long-term; 14.5 mg/m³	Repeated dose toxicity
	General population	Oral	Systemic, long-term; 8.33 mg/kg bw/day	Repeated dose toxicity
	General population	Dermal	Systemic, long-term; 8.33 mg/kg bw/day	Repeated dose toxicity
	Workers	Inhalation	Systemic, long-term; 48.5 mg/m³	Repeated dose toxicity
	General population	Eyes	Local effects	No hazard identified
	Workers	Eyes	Local effects	No hazard identified

ethylene di (S-thioacetate)	Workers	Dermal	Systemic, long-term; 0.14 mg/kg bw/day	Repeated dose toxicity
	Workers	Eyes	Local effects	Medium hazard (no threshold derived).
	General population	Dermal	Systemic, long-term; 0.05 mg/kg bw/day	Repeated dose toxicity
	General population	Oral	Systemic, long-term; 0.05 mg/kg bw/day	Repeated dose toxicity
	General population	Eyes	Local effects	Low hazard (no threshold derived).
	Workers	Inhalation	Systemic, long-term; 0.49 mg/m³	Repeated dose toxicity
	General population	Inhalation	Systemic, long-term; 0.074 mg/m³	Repeated dose toxicity

n-butyl acrylate	Workers	Inhalation	Local, long-term; 11 mg/m³	irritation respiratory tract
	General population	Eyes	Local effects	No hazard identified
	Workers	Eyes	Local effects	Medium hazard (no threshold derived).

N,N-bis-(2-hydroxypropyl)-p-toluidine	Workers	Inhalation	Systemic, long-term; 2.47 mg/m³	Repeated dose toxicity
	General population	Oral	Systemic, long-term; 0.25 mg/kg bw/day	Repeated dose toxicity
	Workers	Dermal	Systemic, long-term; 0.7 mg/kg bw/day	Repeated dose toxicity
	General population	Eyes	Local effects	Hazard unknown (no further information necessary)
	Workers	Eyes	Local effects	Low hazard (no threshold derived)

PNEC-Values

Remarks: PNEC-Values

Critical component	**Environmental compartment**	**PNEC-Values**	**Remarks**
Methyl methacrylate	marine water	0.94 mg/l	

	freshwater sediment	5.74 mg/kg	
	Sewage treatment plant	10 mg/l	
	Soil	1.47 mg/kg	
	freshwater	0.94 mg/l	

2,2'-Ethylenedioxydiethyl dimethacrylate	freshwater	0.164 mg/l	
	marine water	0.016 mg/l	
	Soil	0.274 mg/kg	
	freshwater sediment	1.85 mg/kg	
	marine water sediment	0.185 mg/kg	
	Sewage treatment plant	10 mg/l	

ethylene di(S-thioacetate)	freshwater	4.8 µg/l	

n-butyl acrylate	freshwater sediment	0.034 mg/kg	
	marine water	0 mg/l	
	Soil	1 mg/kg	
	freshwater	0,003 mg/kg	
	Sewage treatment plant	3,5 mg/l	
	marine water sediment	0,0003 mg/kg	

N,N-bis-(2-hydroxypropyl)-p-toluidine	Soil	0,023 mg/kg	
	marine water	0,002 mg/l	
	Sewage treatment plant	199,5 mg/l	
	marine water sediment	0,016 mg/kg	
	freshwater sediment	0.163 mg/kg	
	freshwater	0.017 mg/kg	

8.2 Exposure controls Appropriate

Engineering Controls: For monitoring procedures refer for instance to "Empfohlene Analysenverfahren für Arbeitsplatzmessungen", Schriftenreihe der Bundesanstalt für Arbeitsschutz and "NIOSH Manual of Analytical Methods", National Institute for Occupational Safety and Health.

Individual protection measures, such as personal protective equipment

Eye/face protection: tightly fitting goggles

Hand Protection: Material: butyl rubber gloves
Break-through time: 60 min
Glove thickness: 0.7 mm
Guideline: EN 374
Additional Information: Gloves should be replaced regularly, especially after extended contact with the product., For each work-place a suitable glove type has to be selected.

Skin and Body Protection: On handling of larger quantities: face mask, chemical-resistant boots and apron

Respiratory Protection: Breathing apparatus in case of high concentrations short term: filter appliance, filter A

Hygiene measures: Store work clothing separately. Take off all contaminated clothing immediately. Follow the usual good standards of occupational hygiene. Clean skin thoroughly after work; apply skin cream.

Environmental Controls: No data available.

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9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	liquid
Form	liquid
Colour	colourless
Odour	ester-like
Odor Threshold:	No data available.
Freezing Temperature	not available
Boiling Temperature	100.5 °C (methyl methacrylate)
Flammability:	Not applicable
Lower explosion limit	2.1 %(V) (methyl methacrylate)
Upper explosion limit	12.5 %(V) (methyl methacrylate)
Flash point	10 °C (methyl methacrylate)
Self Ignition Temperature:	430 °C (methyl methacrylate)
Decomposition Temperature:	No decomposition if used as directed.
pH	Approximate 7 in Water
Kinematic viscosity:	No data available.
Dynamic viscosity:	approx. 900 mPa.s
Flow Time: Solubility(ies)	Not applicable
Solubility in water	ca. 16 g/l (methyl methacrylate)
Solubility (other):	No information available.
Partition coefficient (n-octanol/water):	No data available.
Vapour pressure	38.7 hPa (20 °C) (methyl methacrylate)
Density	ca. 1 g/cm3 (20 °C)
Relative density	No data available.
Bulk density:	No data available.
Relative vapor density:	> 1 (20°C)
Particle characteristics	
Particle Size Distribution:	Not applicable
Specific surface area:	Not applicable
Surface charge/Zeta potential:	Not applicable
Assessment:	Not applicable
Shape:	Not applicable
Crystallinity:	Not applicable
Surface treatment:	Not applicable

9.2. Other information

VOC Content:	EU. Directive 2010/75/EU on Industrial Emissions (IPPC), Annex II, L 334/17: 386.23 g/l ~38.62 % (calculated) EC Directive 2004/42: 386.77 g/l ~38.68 % (calculated)

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10. Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

No decomposition if used as directed.

10.3. Possibility of hazardous reactions

Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

10.4. Conditions to avoid

Heat and ignition sources, aging, contamination, oxygen free atmosphere. Ultraviolet light.

10.5. Incompatible materials
Peroxides, amines, sulfur compounds, heavy metal ions, alkalis, reducing agents and oxidizing agents.
10.6. Hazardous decomposition products
None when used as directed.

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11. Toxicological information

Information on likely routes of exposure

Inhalation:	Relevant route of exposure. Information on effects are given below.
Skin Contact:	Relevant route of exposure. Information on effects are given below.
Eye contact:	Relevant route of exposure. Information on effects are given below.
Ingestion:	If handled correctly, not a relevant route of exposure. Information on effects are given below.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation:	Headache. Dizziness.
Skin Contact:	May cause allergic skin reaction. May cause skin irritation.
Eye contact:	Causes serious eye irritation.
Ingestion:	If handled correctly, not a relevant route of exposure. Information on effects are given below.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Acute toxicity (list all possible routes of exposure)
Oral

Product:	ATEmix: > 2,000 mg/kg
Components:	
Methyl methacrylate	LD 50 (Rat): > 5,000 mg/kg Based on available data, the classification criteria are not met.
triethyleneglycol dimethacrylate	LD 50 (Rat): > 5,000 mg/kg
ethylene di(S-thioacetate)	LD 50 (Rat, male): 303 mg/kg
n-butyl acrylate	LD 50 (Rat): 3,150 mg/kg
N,N-bis-(2-hydroxypropyl)-p-toluidine	LD 50 (Rat): 25 mg/kg

Dermal

Product:	Not classified for acute toxicity based on available data.
Components:	
Methyl methacrylate	LD 50 (Rabbit): > 5,000 mg/kg Based on available data, the classification criteria are not met.
triethyleneglycol dimethacrylate	LD 50 (Mouse): > 2,000 mg/kg Based on available data, the classification criteria are not met.
ethylene di(S-thioacetate)	LD 50 (Rat): > 2,000 mg/kg Based on available data, the classification criteria are not met.
n-butyl acrylate	LD 50 (Rabbit): > 2,000 mg/kg
N,N-bis-(2-hydroxypropyl)-p-toluidine	LD 50 (Rat): > 2,000 mg/kg

Inhalation

Inhalation

Product:	Not classified for acute toxicity based on available data.
Components:	
Methyl methacrylate	LC 50 (Rat): 29.8 mg/l Vapour Dusts, mists and fumes, No data available.
triethyleneglycol dimethacrylate	Vapour, No data available. Dusts, mists and fumes. No data available.
ethylene di(S-thioacetate)	LC 50 (Acute toxicity estimate): 1.5 mg/l Dusts, mists and fumes LC 50 (Acute toxicity estimate): 11 mg/l Vapour
n-butyl acrylate	LC 50 (Rat): 10.3 mg/l Vapour Dusts, mists and fumes, No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	The substance or mixture has no acute inhalation toxicity, Dusts, mists and fumes The substance or mixture has no acute inhalation toxicity, Vapour

Repeated dose toxicity

Product:	No data available.
Components:	
Methyl methacrylate	NOAEL (Rat, Inhalation (Vapour)): 25 ppm NOAEL (Rat, Oral): 2000 ppm
triethyleneglycol dimethacrylate	NOAEL (Rat, Oral): 1,000 mg/kg
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	No data available.

Skin Corrosion/Irritation:

Product:	Contact with skin may cause irritations.
Components:	
Methyl methacrylate	(Rabbit): Irritating
triethyleneglycol dimethacrylate	FDA 1959 Draize, occlusive (Rabbit): Not irritating, 24 h
ethylene di(S-thioacetate)	(Rabbit): Not irritating
n-butyl acrylate	(Rabbit): Irritating.
N,N-bis-(2-hydroxypropyl)-p-toluidine	

Serious Eye Damage/Eye Irritation:

Product:	Contact with the eyes may cause irritation.
Components:	
Methyl methacrylate	Not irritating Draize Rabbit: Based on available data, the classification criteria are not met.
triethyleneglycol dimethacrylate	Not irritating OECD 405 Rabbit:
ethylene di(S-thioacetate)	(Rabbit): Irritating.
n-butyl acrylate	(Rabbit): Irritating.
N,N-bis-(2-hydroxypropyl)-p-toluidine	(Rabbit): Moderately irritating OECD 405

Respiratory or Skin Sensitization

Product:	No data available.
Components:	
Methyl methacrylate	Local Lymph Node Assay (LLNA), OECD 429 (Mouse): Skin sensitizer
triethyleneglycol dimethacrylate	Local Lymph Node Assay (LLNA), OECD 429 (Mouse): Skin sensitizer
ethylene di(S-thioacetate)	Maximization Test, OECD 406 (Guinea Pig): Strong skin sensitizer.

n-butyl acrylate	Local Lymph Node Assay (LLNA), OECD 429 (Mouse): Skin sensitizer
N,N-bis-(2-hydroxypropyl)-p-toluidine	Not a skin sensitizer.

Carcinogenicity

Product:	Contains no ingredient listed as a carcinogen (>0.1%).
Components:	
Methyl methacrylate	Not classified
triethyleneglycol dimethacrylate	No data available.
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	Not classified

Germ Cell Mutagenicity

In vitro

Product:	No data available.
Components:	
Methyl methacrylate	No data available.
triethyleneglycol dimethacrylate	gene mutation test (OECD 476): negative
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	(OECD TG 471)negative

In vivo

Product:	No data available.
Components:	
Methyl methacrylate	No data available.
triethyleneglycol dimethacrylate	No data available.
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	Ames test: negative

Reproductive toxicity

Product:	Contains no ingredient listed as toxic to reproduction (>0.1%).
Components:	
Methyl methacrylate	Not classified
triethyleneglycol dimethacrylate	No data available.
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	Not classified

Specific Target Organ Toxicity - Single Exposure

Product:	No data available.
Components:	
Methyl methacrylate	Inhalation - vapor: Respiratory system - Category 3 with respiratory tract irritation.
triethyleneglycol dimethacrylate	No data available.
ethylene di(S-thioacetate)	Inhalation: Lungs - Category 3 with respiratory tract irritation.
n-butyl acrylate	Inhalation - vapor: Respiratory system - Category 3 with respiratory tract irritation.
N,N-bis-(2-hydroxypropyl)-p-toluidine	Not classified

Specific Target Organ Toxicity - Repeated Exposure

Product:	No data available.
Components:	
Methyl methacrylate	Not classified
triethyleneglycol dimethacrylate	No data available.

ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	Not classified

Aspiration Hazard

Product:	Due to the viscosity, this product does not present an aspiration hazard.

Components:

Methyl methacrylate	Not classified
triethyleneglycol dimethacrylate	Not classified
ethylene di(S-thioacetate)	Not classified
n-butyl acrylate	Not classified
N,N-bis-(2-hydroxypropyl)-p-toluidine	Not classified

11.2 Information on other hazards

Endocrine disrupting properties

Product:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Components:

Methyl methacrylate	No data available.
triethyleneglycol dimethacrylate	No data available.
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	No data available.

Other hazards

Product:	Avoid contact with the skin and eyes and inhalation of the product vapours.

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12. Ecological information

12.1. Toxicity

Aquatoxicity

Fish

Product:	No data available.

Components:

Methyl methacrylate	LC 50 (Oncorhynchus mykiss, 96 h): > 79 mg/l NOEC (Danio rerio, 32 d): 9.4 mg/l literature
triethyleneglycol dimethacrylate	LC 50 (Danio rerio, 96 h): 16.4 mg/l
ethylene di(S-thioacetate)	LC 50 (Leuciscus idus (Golden orfe), 48 h): 4.85 mg/l
n-butyl acrylate	LC 50 (Oncorhynchus mykiss, 96 h): > 5.2 mg/l
N,N-bis-(2-hydroxypropyl)-p-toluidine	LC 50 (Danio rerio, 96 h): 17 mg/l

Aquatic Invertebrates

Product:	No data available.

Components:

Methyl methacrylate	EC 50 (Daphnia magna, 48 h): 69 mg/l NOEC (Daphnia magna, 21 d): 37 mg/l
triethyleneglycol dimethacrylate	No data available.
ethylene di(S-thioacetate)	EC 50 (Daphnia magna, 48 h): 11 mg/l
n-butyl acrylate	EC 50 (Daphnia magna, 48 h): 8.2 mg/l
N,N-bis-(2-hydroxypropyl)-p-toluidine	EC 50 (Daphnia magna, 48 h): 28.8 mg/l

Toxicity to Aquatic Plants

Product:	No data available.

Components:

Methyl methacrylate	EC 50 (Selenastrum capricornutum (green algae), 72 h): > 100 mg/l (OECD Test Guideline 201)
triethyleneglycol dimethacrylate	EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): > 100 mg/l (OECD 201)
ethylene di(S-thioacetate)	EC 50 (Desmodesmus subspicatus (green algae), 72 h): > 100 mg/l (OECD 201)
n-butyl acrylate	EC 50 (Selenastrum capricornutum (green algae), 96 h): 2.65 mg/l (OECD TG 201)
N,N-bis-(2-hydroxypropyl)-p-toluidine	EC 50 (Desmodesmus subspicatus (green algae), 72 h): 245 mg/l (OECD TG 201)

Toxicity to microorganisms

Product:	No data available.

Components:

Methyl methacrylate	No data available.
triethyleneglycol dimethacrylate	No data available.
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	EC10 (30 min): > 1,995 mg/l (OECD 209)

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.

Components:

Methyl methacrylate	No data available.
triethyleneglycol dimethacrylate	No data available.
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	No data available.

Aquatic Invertebrates

Product:	No data available.

Components:

Methyl methacrylate	No data available.
triethyleneglycol dimethacrylate	NOEC (Daphnia magna, 21 d): 32 mg/l
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	NOEC (Daphnia magna), 21 d): 0.136 mg/l
N,N-bis-(2-hydroxypropyl)-p-toluidine	No data available.

Toxicity to Aquatic Plants

Product:	No data available.

Components:

Methyl methacrylate	NOEC (Selenastrum capricornutum (green algae), 72 h): > 100 mg/l (OECD Test Guideline 201)
triethyleneglycol dimethacrylate	NOEC (Algae (Pseudokirchneriella subcapitata), 72 h): 18.6 mg/l (OECD 201)
ethylene di(S-thioacetate)	NOEC (Desmodesmus subspicatus (green algae), 72 h): >= 100 mg/l (OECD 201)
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	No data available.

Toxicity to microorganisms

Product:	No data available.

Components:

Methyl methacrylate	No data available.
triethyleneglycol dimethacrylate	No data available.

ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	No data available.

12.2 Persistence and Degradability

Biodegradation

Product:	(14 d, OECD 301 C): 94 % Readily biodegradable Related to substance: methyl methacrylate
Methyl methacrylate	(14 d, OECD 301 C): 94 % The product is easily biodegradable.
triethyleneglycol dimethacrylate	(28 d): 85 % The product is easily biodegradable.
ethylene di(S-thioacetate)	(28 d, OECD 301 D): 65.9 % The product is easily biodegradable.
n-butyl acrylate	60 % The product is easily biodegradable. > 80 % The product is easily biodegradable.
N,N-bis-(2-hydroxypropyl)-p-toluidine	(28 d, OECD 301 B): 39 % The product is not biodegradable.

BOD/COD Ratio

Product:	No data available.
Components:	
Methyl methacrylate	No data available.
triethyleneglycol dimethacrylate	No data available.
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	No data available.

12.3 Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	no evidence for hazardous properties
Components:	
Methyl methacrylate	No data available.
triethyleneglycol dimethacrylate	Accumulation in organisms is not expected due to the coefficient of distribution of n-octanol in water (log Pow).
ethylene di(S-thioacetate)	Bioconcentration Factor (BCF): 2.82
n-butyl acrylate	Accumulation in organisms is not expected due to the coefficient of distribution of n-octanol in water (log Pow).
N,N-bis-(2-hydroxypropyl)-p-toluidine	No data available.

Partition Coefficient n-octanol / water (log Kow)

Product:	No data available.
Components:	
Methyl methacrylate	Log Kow: 1.38
triethyleneglycol dimethacrylate	Log Kow: 2.3 20 °C (OECD 117)
ethylene di(S-thioacetate)	Log Kow: 1.46 20 °C (OECD 117)
n-butyl acrylate	Log Kow: 2.36 Log Kow: 2.38 25 °C
N,N-bis-(2-hydroxypropyl)-p-toluidine	Log Kow: 2.1 (OECD 107)

12.4 Mobility in soil:

Product:	no specific test data available
Components:	
Methyl methacrylate	No data available.

triethyleneglycol dimethacrylate	No data available.
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	The product evaporates slowly.
N,N-bis-(2-hydroxypropyl)-p-toluidine	No data available.

12.5 Results of PBT and vPvB

Product:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Methyl methacrylate	Non-classified vPvB substance Non-classified PBT substance.
triethyleneglycol	Non-classified vPvB substance
ethylene di(S-thioacetate)	Non-classified PBT substance.
n-butyl acrylate	Non-classified vPvB substance Non-classified PBT substance.
N,N-bis-(2-hydroxypropyl)-p-toluidine	Non-classified vPvB substance Non-classified PBT substance.

12.6 Endocrine disrupting properties:

Product:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Components:

Methyl methacrylate	No data available.
triethyleneglycol dimethacrylate	No data available.
ethylene di(S-thioacetate)	No data available.
n-butyl acrylate	No data available.
N,N-bis-(2-hydroxypropyl)-p-toluidine	No data available.

12.7 Other adverse effects:

Other hazards

Product:	Prevent substance from entering soil, natural bodies of water and sewer systems.

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13. Disposal considerations

13.1. Waste treatment methods

General information:	No data available.
Disposal methods:	Waste is hazardous. It must be disposed of in accordance with the regulations after consultation of the competent local authorities and the disposal company in a suitable and licensed facility.
Contaminated Packaging:	Contaminated packaging should ideally be emptied; it can then be recycled after having been decontaminated. Packaging that cannot be cleaned should be disposed of professionally. Uncontaminated packaging may be taken for recycling.

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14. Transport Information

14.1 UN number

ADR	UN1866
RID	UN1866
IMDG	UN1866
IATA	UN1866

14.2 UN proper shipping name

ADR	RESIN SOLUTION
RID	RESIN SOLUTION
IMDG	RESIN SOLUTION
IATA	Resin solution

14.3 Transport hazard class(es)

ADR	3
RID	3
IMDG	3
IATA	3

14.4 Packing group

ADR	II
Packing group	F1
Classification Code	33
Labels	3
Tunnel restriction code:	(D/E)
Remarks	Special provision 640D, observe §35 GGVSEB
RID	
Packing group	II
Classification Code	F1
Hazard Identification Number	33
Labels	3
Remarks	Special provision 640D
IMDG	
Packing group	II
Labels	3
EmS Code	F-E,S-E
IATA (Cargo aircraft only)	
Packing instruction (cargo aircraft)	364
Packing instruction (LQ)	Y341
Packing group	II
Labels	3
IATA (Passenger and cargo aircraft)	
Packing instruction (passenger aircraft)	353
Packing instruction (LQ)	Y341
Packing group	II
Labels	3

14.5 Environmental hazards

ADR	
Environmentally hazardous	no
RID	
Environmentally hazardous	no
IMDG	
Marine pollutant	no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data

Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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

Not applicable for product as supplied.

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15. Regulatory information

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

EU Regulations

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances: none

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex II, New Substances: none

EU. REACH Annex XIV, Substances Subject to Authorization: none

EU. Regulation 2019/1021/EU on persistent organic pollutants (POPs) (recast), as amended: none

EU. Directive 2010/75/EU on Industrial Emissions (IPPC), Annex II, L 334/17: none

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended: none

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended: none

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended: none

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended: none

EU. REACH Candidate List of Substances of Very High Concern for Authorization (SVHC): none **Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use:**

Chemical name	CAS-No.	Concentration
Methyl methacrylate	80-62-6	

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work.: none

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding.: none

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I:

Classification	Lower-tier Requirements	Upper-tier Requirements
P5c. Flammable liquids	5,000 t	50,000 t
ATTENTION: Classification into hazard category P5c is a minimum classification. Only the operator may estimate if the product is covered by hazard category P5a or P5c. For P5a and P5b different qualifying quantities are valid.		

EU. Regulation No. 166/2006 PRTR (Pollutant Release and Transfer Registry), Annex II: Pollutants: none

Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work:

Chemical name	CAS-No.	Concentration
Methyl methacrylate	80-62-6	
n-butyl acrylate	141-32-2	

National Regulations

Please note Directive 94/33/EC (Protection of Young Workers at the Workplace Directive) and amendments. Please note Directive 92/85/EEC (Pregnant Workers Directive) and amendments.

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

Inventory Status:

Registration, Evaluation and Authorisation of Chemicals (REACH):	preregistered, registered or exempted
US TSCA Inventory:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
Canada NDSL Inventory:	Not on Inventory.
Australia AICS:	Not on Inventory.
Japan (ENCS) List:	Not on Inventory.
Korea Existing Chemicals Inv. (KECI):	Not on Inventory.
Philippines PICCS:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

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16. Other Information

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; AGW - Occupational exposure limit; ASTM - American Society for Testing and Materials; AwSV - Ordinance on facilities for handling substances that are hazardous to water; BSB - Biochemical oxygen demand; c.c. - closed cup; CAS - Chemical Abstract Services; CESIO - European Committee of Organic Surfactants and their Intermediates; CSB - Chemical oxygen demand; DMEL - Derived minimum effect level; DNEL - Derived no effect level; EbC50 - median concentration in terms of reduction of growth; EC -Effective concentration; EINECS - European Inventory of Existing Commercial Chemical Substances; EN - European norm; ErC50 - median concentration in terms of reduction of growth rate; GGVSEB - German ordinance for road, rail and inland waterway transportation of dangerous goods; GGVSee - German ordinance for sea transportation of dangerous goods; GLP - Good Laboratory Practice; GMO - Genetic Modified Organism; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; ISO - International Organization For Standardization; LD/LC -lethal dosis/concentration; LOAEL - Lowest observed adverse effect level; LOEL - Lowest observed effect level; M-Factor - multiplying factor; NOAEL - No observed adverse effect level; NOEC - no observed effect concentration; NOEL - no observed effect level; o.c. - open cup; OECD - Organisation for Economic Cooperation and Development; OEL - Occupational Exposure Limit; PBT - Persistent, bioaccumulative, toxic; PNEC - Predicted no effect concentration; REACH - REACH registration; RID - Convention concerning International Carriage by Rail; SVHC - Substances of Very High Concern; TA - Technical Instructions; TRGS - Technical Rules for Hazardous Substances; vPvB - very persistent, very bioaccumulative; WGK - Water Hazard Class

Methyl methacrylate	Note D	Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed in Part 3. However, such substances are sometimes placed on the market in a non-stabilised form. In this case, the supplier must state on the label the name of the substance followed by

the words 'non-stabilised'.

n-butyl acrylate

Key literature references and sources for data: No data available.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 as amended.	Classification procedure
Flammable liquids, Category 2 Skin irritation, Category 2 Skin sensitizer, Category 1 Specific Target Organ Toxicity - Single Exposure, Category 3	On basis of test data. Calculation method Calculation method Calculation method

Wording of the H-statements in section 2 and 3

H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour
H300 Fatal if swallowed.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects

This version replaces all previous versions.

Other information:

The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is exceeded, the product may polymerize with heat evolution.

Disclaimer:

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