Safety Data Sheet

According to Regulation (EC) No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and (EC) No. 1907/2006 (REACH)

Initial preparation date: 01.19.2022

Revision date: 01.19.2022

BioMed Black Resin

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

1.1 Product identifier

Product Name: BioMed Black Resin

Product code: FLBMBL01

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

Relevant identified uses: For uses in Formlabs SLA Printers

Uses advised against: Not determined or not applicable.

Reasons why uses advised against: Not determined or not applicable.

1.3 Details of the manufacturer/supplier of the safety data sheet

Manufacturer:
United States
Formlabs, Inc
35 Medford St
Suite 201 Somerville, MA 02143
+1 617 855 0762
sds@formlabs.com

Supplier:
Germany
Formlabs GmbH
Nalepastr. 18
Berlin, . 12459
+49 30 555 795 880

1.4 Emergency telephone number:

1-800-424-9300 (24/7)

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture:

Classification according to Regulation (EC) No. 1272/2008 (CLP):

Skin irritation, category 2
Eye Irritation, category 2
Skin sensitization, category 1
Specific target organ toxicity - single exposure, category 3, respiratory tract irritation
Chronic aquatic hazard, category 2

Hazard-determining components of labeling:

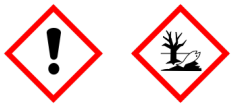
Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate
2-hydroxyethyl methacrylate
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate

Additional Information: None

2.2 Label elements

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

Hazard pictograms:



Signal Word: Warning

Hazard statements:

H315 Causes skin irritation
H319 Causes serious eye irritation
H317 May cause an allergic skin reaction
H335 May cause respiratory irritation
H411 Toxic to aquatic life with long lasting effects

Precautionary statements:

P264 Wash skin thoroughly after handling
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P272 Contaminated work clothing should not be allowed out of the workplace
P271 Use only outdoors or in a well-ventilated area
P273 Avoid release to the environment
P302+P352 IF ON SKIN: Wash with plenty of water.
P332+P313 If skin irritation occurs: Get medical advice/attention
P362 Take off contaminated clothing
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
P333+P313 If skin irritation or rash occurs: Get medical advice/attention
P363 Wash contaminated clothing before reuse
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 Call a POISON CENTER/doctor/...if you feel unwell
P391 Collect spillage
P403+P233 Store in a well-ventilated place. Keep container tightly closed
P405 Store locked up
P501 Dispose of contents/container in accordance with local/regional/national regulations

2.3 Other hazards: None known

SECTION 3: Composition/information on ingredients

3.1 Substance: Not applicable.

3.2 Mixture:

Identification	EU REACH Registration No.	Name	Classification according to Regulation (EC) No. 1272/2008 (CLP)	Weight %
CAS number: 41637-38-1 EC number: 609-946-4	–	Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid	Skin Sens. 1; H317 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3 (RI); H335 Aquatic Chronic 4; H413	<60
CAS number: 72869-86-4 EC number: 276-957-5	–	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	Skin Sens. 1; H317 Aquatic Chronic 2; H411	<30
CAS number: 868-77-9 EC number: 212-782-2	–	2-hydroxyethyl methacrylate	Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Irrit. 2; H319	<10
CAS number: 84434-11-7 EC number: 282-810-6	–	Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	Skin Sens. 1B; H317 Aquatic Chronic 2; H411	<2
CAS number: 7631-86-9 EC number: 231-545-4	–	Silicon dioxide (amorphous)	Not classified	4-7

Additional information: None
Full Text of H and EUH statements: See section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes:

Show this Safety Data Sheet to the doctor in attendance.

Following inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. Keep person at rest. If breathing is difficult, administer oxygen. If breathing has stopped, provide artificial respiration. If experiencing respiratory symptoms, seek medical advice/attention.

If inhaled, remove person to fresh air and place in a position comfortable for breathing. If respiratory symptoms develop or persist, seek medical advice/attention.

Following skin contact:

Remove contaminated clothing and shoes. Rinse skin with copious amounts of water [shower] for several minutes. Launder contaminated clothing before reuse. If symptoms develop or persist, seek medical advice/attention.

Wash affected area with plenty of soap and water. Remove contaminated clothing and launder before reuse. If skin irritation develops or persists, seek medical advice/attention.

Following eye contact:

Rinse eyes with plenty of water for several minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. If symptoms develop or persist, seek medical advice/attention.

Rinse eyes with plenty of gently flowing lukewarm water for 15 minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. If symptoms develop or persist, seek medical advice/attention.

Immediately rinse eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. If eye irritation develops or persists, seek medical advice/attention.

Following ingestion:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

Self-Protection of the first aider:

Not determined or not available.

4.2 Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Skin contact may result in redness, pain, burning and inflammation.

Eye contact may result in irritation, redness, pain, inflammation, itching, burning and tearing.

Dermal exposure may cause an allergic skin reaction. Symptoms may include irritation, redness, pain, rash, inflammation, itching, burning and dermatitis.

Inhalation may have adverse effects on the respiratory tract. Symptoms may include cough, breathing difficulties, sore throat and inflammation of the mucous membrane lining the respiratory tract.

Delayed symptoms and effects:

Effects are dependent on exposure (dose, concentration, contact time).

4.3 Indication of any immediate medical attention and special treatment needed

Specific treatment:

If respiratory symptoms persist, seek medical attention.

Notes for the doctor:

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Water mist/fog, carbon dioxide, dry chemical or alcohol resistant foam.

Unsuitable extinguishing media:

Do not use water jet.

5.2 Special hazards arising from the substance or mixture:

Thermal decomposition may produce irritating/toxic fumes/gases.

5.3 Advice for firefighters

Personal protection equipment:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode.

Special precautions:

Avoid contact with skin, eyes, hair and clothing. Do not breathe fumes/gas/mists/aerosols/vapors/dusts. Move containers from fire area if safe to do so. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Avoid contact with skin, eyes and clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling.

6.2 Environmental precautions:

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up:

Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

6.4 Reference to other sections:

For personal protective equipment see Section 8. For disposal see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

7.2 Conditions for safe storage, including any incompatibilities:

Store in cool, dry, well-ventilated location out of direct sunlight. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Store away from incompatible materials (See Section 10).

7.3 Specific end use(s):

Refer to Section 1 (Recommended Use).

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Only those substances with limit values have been included below.

Occupational Exposure limit values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
Lithuania	2-hydroxyethyl methacrylate	868-77-9	8-Hour TWA: 20 mg/m³
Bulgaria	Silicon dioxide (amorphous)	7631-86-9	TWA: 0.07 mg/m³ (Free silicon dioxide, amorphous, synthetic from condensation and electrothermal processes - respirable fraction)
	Silicon dioxide (amorphous)	7631-86-9	TWA: 4 mg/m³ (Free silicon dioxide, amorphous and crystalline, from natural sedimentation [opal, chalcedony, etc], inhalable fraction)
	Silicon dioxide (amorphous)	7631-86-9	TWA: 10 mg/m³ (Free silicon dioxide, amorphous, synthetic from condensation and electrothermal processes, inhalable fraction)
	Silicon dioxide (amorphous)	7631-86-9	TWA: 1 mg/m³ (Free silicon dioxide, amorphous and crystalline, from natural sedimentation [opal, chalcedony, etc], respirable fraction)
Croatia	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 6 mg/m³ (total dust)
	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 2.4 mg/m³ (respirable dust)
Cyprus	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 5 mg/m³ (Silicon dioxide [amorphous] [particles > 5 micrometers])
	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 2 mg/m³ (Silicon dioxide [amorphous] [particles < 5 micrometers])
Czech Republic	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 4 mg/m³ (dust)
Estonia	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 2 mg/m³ (fine dust - respirable fraction)
Latvia	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 1 mg/m³
Poland	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 10 mg/m³ (inhalable fraction)
	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 2 mg/m³ (respirable fraction)
Slovakia	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 0.3 mg/m³ (Silica, amorphous (fused silica, fused silica, fumes, burnt diatomaceous earth)
Slovenia	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 4 mg/m³ (inhalable fraction)
Austria	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 4 mg/m³ (inhalable)
Belgium	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 10 mg/m³
Finland	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 5 mg/m³

Country (Legal Basis)	Substance	Identifier	Permissible concentration
Germany (TRGS 900)	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 4 mg/m³ (inhalable)
Ireland	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 6 mg/m³ (inhalable fraction)
	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 2.4 mg/m³ (respirable fraction)
United Kingdom	Silicon dioxide (amorphous)	7631-86-9	TWA: 6 mg/m³ (inhalable)
	Silicon dioxide (amorphous)	7631-86-9	TWA: 2.4 mg/m³ (respirable)
Germany (MAK)	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 4 mg/m³ (inhalable fraction)
	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 4 mg/m³ (inhalable)
Denmark	Silicon dioxide (amorphous)	7631-86-9	8-Hour TWA: 2 mg/m³ (inhalable)
	Silicon dioxide (amorphous)	7631-86-9	STEL: 4 mg/m³ (inhalable)

Biological limit values:

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

Derived No Effect Level (DNEL):

Ingredient Name: Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid

CAS #: 41637-38-1

Workers - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	3.52 mg/m³
	Chronic - Dermal	2 mg/kg bw/day
Workers - Local Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	No hazard identified
General Population - Systemic Effects	Acute - Oral	No hazard identified
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	0.5 mg/kg bw/day
	Chronic - Inhalation	0.87 mg/m³
	Chronic - Dermal	1 mg/kg bw/day
General Population - Local Effect	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	No hazard identified

Ingredient Name: 2-hydroxyethyl methacrylate

CAS #: 868-77-9

Workers - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	4.9 mg/m³
	Chronic - Dermal	1.3 mg/kg bw/day
Workers - Local Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	No hazard identified
General Population - Systemic Effects	Acute - Oral	No hazard identified
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	0.83 mg/kg bw/day
	Chronic - Inhalation	2.9 mg/m³
	Chronic - Dermal	0.83 mg/kg bw/day
General Population - Local Effect	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	No hazard identified

Ingredient Name: Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate
CAS #: 84434-11-7

Workers - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	5.88 mg/m³
	Chronic - Dermal	1.7 mg/kg bw/day
Workers - Local Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No hazard identified
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No hazard identified
	Chronic - Dermal	Hazard identified but no DNEL available

General Population - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	Not determined or not applicable.
	Acute - Dermal	Not determined or not applicable.
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	Not determined or not applicable.
	Chronic - Dermal	Not determined or not applicable.
General Population - Local Effect	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	Not determined or not applicable.
	Acute - Dermal	Not determined or not applicable.
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	Not determined or not applicable.
	Chronic - Dermal	Not determined or not applicable.

Ingredient Name: 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate
CAS #: 72869-86-4

Workers - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No exposure expected
	Acute - Dermal	No hazard identified
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	3.3 mg/m³
	Chronic - Dermal	1.3 mg/kg bw/day
Workers - Local Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No exposure expected
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No exposure expected
	Chronic - Dermal	Hazard identified but no DNEL available
General Population - Systemic Effects	Acute - Oral	No hazard identified
	Acute - Inhalation	No exposure expected
	Acute - Dermal	No hazard identified
	Chronic - Oral	0.3 mg/kg bw/day
	Chronic - Inhalation	0.6 mg/m³
	Chronic - Dermal	0.7 mg/kg bw/day
General Population - Local Effect	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	No exposure expected
	Acute - Dermal	No exposure expected
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	No exposure expected
	Chronic - Dermal	Hazard identified but no DNEL available

Ingredient Name: Silicon dioxide (amorphous)
CAS #: 7631-86-9

Workers - Systemic Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	Hazard identified but no DNEL available
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	Hazard identified but no DNEL available
	Chronic - Dermal	Hazard identified but no DNEL available
Workers - Local Effects	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	Hazard identified but no DNEL available
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	Hazard identified but no DNEL available
	Chronic - Dermal	Hazard identified but no DNEL available
General Population - Systemic Effects	Acute - Oral	Hazard identified but no DNEL available
	Acute - Inhalation	Hazard identified but no DNEL available
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Hazard identified but no DNEL available
	Chronic - Inhalation	Hazard identified but no DNEL available
	Chronic - Dermal	Hazard identified but no DNEL available
General Population - Local Effect	Acute - Oral	Not determined or not applicable.
	Acute - Inhalation	Hazard identified but no DNEL available
	Acute - Dermal	Hazard identified but no DNEL available
	Chronic - Oral	Not determined or not applicable.
	Chronic - Inhalation	Hazard identified but no DNEL available
	Chronic - Dermal	Hazard identified but no DNEL available

Predicted No Effect Concentration (PNEC):
Ingredient Name: Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid
CAS #: 41637-38-1

Environmental Protection Target	PNEC
Fresh water	Not determined or not available.
Freshwater sediments	Not determined or not available.
Marine water	Not determined or not available.
Marine sediments	Not determined or not available.
Microorganisms in sewage treatment	Not determined or not available.
Soil (agricultural)	Not determined or not available.
Air	No hazard identified

Ingredient Name: 2-hydroxyethyl methacrylate
CAS #: 868-77-9

Environmental Protection Target	PNEC
Fresh water	0.482 mg/L
Freshwater sediments	3.79 mg/kg
Marine water	0.482 mg/L
Marine sediments	3.79 mg/kg
Microorganisms in sewage treatment	10 mg/L

Soil (agricultural)	0.476 mg/kg
Air	No hazard identified

Ingredient Name: Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate
CAS #: 84434-11-7

Environmental Protection Target	**PNEC**
Fresh water	0.001 mg/L
Freshwater sediments	0.24 mg/kg
Marine water	0 mg/L
Marine sediments	0.024 mg/kg
Microorganisms in sewage treatment	Not determined or not available.
Soil (agricultural)	0.047 mg/kg
Air	No hazard identified

Ingredient Name: 7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate
CAS #: 72869-86-4

Environmental Protection Target	**PNEC**
Fresh water	0.01 mg/L
Freshwater sediments	4.56 mg/kg sediment dw
Marine water	0.001 mg/L
Marine sediments	0.46 mg/kg sediment dw
Microorganisms in sewage treatment	3.61 mg/L
Soil (agricultural)	0.91 mg/kg soil dw
Air	No hazard identified
Oral (Secondary Poisoning)	No exposure expected

Ingredient Name: Silicon dioxide (amorphous)
CAS #: 7631-86-9

Environmental Protection Target	**PNEC**
Fresh water	No hazard identified
Freshwater sediments	No hazard identified
Marine water	No hazard identified
Marine sediments	No hazard identified
Microorganisms in sewage treatment	No hazard identified
Soil (agricultural)	No hazard identified
Air	No hazard identified
Food chain	No exposure expected

Information on monitoring procedures:

Not determined or not applicable.

8.2 Exposure controls

Appropriate engineering controls:

Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

Personal protection equipment

Eye and face protection:

Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

Skin and body protection:

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

Respiratory protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

General hygienic measures:

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Perform routine housekeeping.

Environmental exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Product (substance / mixture) related measures to prevent exposure:	Not determined or not applicable.
Instruction measures to prevent exposure:	Not determined or not applicable.
Organisational measures to prevent exposure:	Not determined or not applicable.
Technical measures to prevent exposure:	Not determined or not applicable.

Risk management measures to control exposure:

Not determined or not applicable.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Black Opaque Liquid
Odor	Characteristic acrylate
Odor threshold	Not determined or not available.
pH	Not determined or not available.
Melting point/freezing point	Not determined or not available.
Initial boiling point/range	> 100°C
Flash point (closed cup)	> 93.5°C
Evaporation rate	Not determined or not available.
Flammability (solid, gas)	Not Flammable
Upper flammability/explosive limit	Not determined or not available.
Lower flammability/explosive limit	Not determined or not available.
Vapor pressure	Not determined or not available.
Vapor density	Not determined or not available.
Density	1.13 g/cm3
Relative density	Not determined or not available.

Solubilities	Not determined or not available.
Partition coefficient (n-octanol/water)	Not determined or not available.
Auto/Self-ignition temperature	Not determined or not available.
Decomposition temperature	Not determined or not available.
Dynamic viscosity	950 cps @ 30°C
Kinematic viscosity	Not determined or not available.
Explosive properties	Not determined or not available.
Oxidizing properties	Not determined or not available.

9.2 Other information

None.

SECTION 10: Stability and reactivity

10.1 Reactivity:

Not reactive under recommended handling and storage conditions.

10.2 Chemical stability:

Stable under recommended handling and storage conditions.

10.3 Possibility of hazardous reactions:

Hazardous reactions are not anticipated under recommended conditions of handling and storage.
Stable under recommended handling and storage conditions.

10.4 Conditions to avoid:

Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.
Incompatible materials.
Avoid storage >38°C (100°F) and exposure to light/direct sunlight and heat.

10.5 Incompatible materials:

Strong oxidizing agents.
Polymerization initiators, including peroxides, strong oxidizing agents, alcohols, copper, copper alloys, carbon steel, iron, rust, and strong bases.

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

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

Name	Route	Result
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	oral	LD50 Rat: >5000 mg/kg
	dermal	LD50 Rat: >2000 mg/kg
2-hydroxyethyl methacrylate	oral	LD50 Rat: 5564 mg/kg
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	oral	LD50 Rat: >5000 mg/kg

Name	Route	Result
Silicon dioxide (amorphous)	oral	LD50 Rat: > 5000 mg/kg
	dermal	LD50 Rabbit: > 2000 mg/kg
	inhalation	LC50 Rat: > 5.01 mg/L (4 h, dust)

Skin corrosion/irritation

Assessment:

Causes skin irritation.

Product data:

No data available.

Substance data:

Name	Result
Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid	Causes skin irritation.
2-hydroxyethyl methacrylate	Causes skin irritation.

Serious eye damage/irritation

Assessment:

Causes serious eye irritation.

Product data:

No data available.

Substance data:

Name	Result
Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid	Cause serious eye irritation.
2-hydroxyethyl methacrylate	Causes serious eye irritation.

Respiratory or skin sensitization

Assessment:

May cause an allergic skin reaction.

Product data:

No data available.

Substance data:

Name	Result
Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid	May cause an allergic skin reaction.
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	May cause an allergic skin reaction.
2-hydroxyethyl methacrylate	May cause an allergic skin reaction.
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	May cause an allergic skin reaction.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

International Agency for Research on Cancer (IARC):

Name	Classification
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	Not Applicable
Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid	Not Applicable
Silicon dioxide (amorphous)	Group 3

National Toxicology Program (NTP): None of the ingredients are listed.

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Reproductive Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data: No data available.

Specific target organ toxicity (single exposure)

Assessment:

May cause respiratory irritation.

Product data:

No data available.

Substance data:

Name	Result
Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid	May cause respiratory irritation.

Specific target organ toxicity (repeated exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data: No data available.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data: No data available.

Information on likely routes of exposure:

No data available.

Symptoms related to the physical, chemical and toxicological characteristics:

No data available.

Other information:

No data available.

SECTION 12: Ecological information

12.1 Toxicity

Acute (short-term) toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

Name	Result
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	Fish LC50 Danio rerio: 10.1 mg/L (96 hr)
	Aquatic Invertebrates EC50 Daphnia magna: > 1.2 mg/L (48 hr)

Chronic (long-term) toxicity

Assessment:

Toxic to aquatic life with long lasting effects.

Product data: No data available.

Substance data:

Name	Result
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	Aquatic Plants NOEC Desmodesmus subspicatus: 0.21 mg/L (72 hr)

12.2 Persistence and degradability

Product data: No data available.

Substance data:

Name	Result
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	The substance is not readily biodegradable (22% degradation in 28 days).
2-hydroxyethyl methacrylate	This substance is considered readily biodegradable.
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	The substance is not readily biodegradable.
Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid	The substance is inherently biodegradable (>24% degradation in 28 days and >60% degradation in 60 days).

12.3 Bioaccumulative potential

Product data: No data available.

Substance data:

Name	Result
2-hydroxyethyl methacrylate	This substance has low potential to bioaccumulate.

Name	Result
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	This substance is not expected to bioaccumulate because of log Kow (2.91).
Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid	The substance is not expected to bioaccumulate (BCF: 7.9 L/Kg).
Silicon dioxide (amorphous)	BCF: 3.16 L/kg

12.4 Mobility in soil

Product data: No data available.

Substance data:

Name	Result
2-hydroxyethyl methacrylate	This substance has low potential to be adsorbed by the soil.
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	This substance is expected to be adsorbed by the soil.
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	The substance has moderate potential to adsorb to organic soil and sediment particles (log Koc: 3.66 dimensionless).
Silicon dioxide (amorphous)	Mobile (log Koc: 1.337)

12.5 Results of PBT and vPvB assessment

Product data:

PBT assessment: This product does not contain any substances that are assessed to be a PBT.

vPvB assessment: This product does not contain any substances that are assessed to be a vPvB.

Substance data:

PBT assessment:

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	This substance is not PBT.
2-hydroxyethyl methacrylate	This substance is not PBT.
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	This substance is not PBT.
Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid	The substance is not PBT.
Silicon dioxide (amorphous)	This substance is not PBT.

vPvB assessment:

7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	This substance is not vPvB.
2-hydroxyethyl methacrylate	This substance is not vPvB.

Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	This substance is not vPvB.
Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid	The substance is not vPvB.
Silicon dioxide (amorphous)	This substance is not vPvB.

12.6 Other adverse effects: No data available.

12.7 Hazard to the ozone layer

Assessment: Based on available data, the classification criteria are not met.
Product data: No data available.
Substance data: No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

13.1.1 Product / Packaging disposal:
Do not discharge into public wastewater or surface waters. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities.

Waste codes / waste designations according to LoW: Not determined or not available.

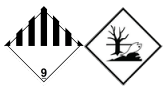
13.1.2 Waste treatment-relevant information: Not determined or not available.

13.1.3 Sewage disposal-relevant information: Not determined or not available.

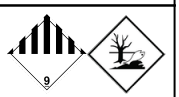
13.1.4 Other disposal recommendations:
Do not discharge into public wastewater or surface waters. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities.

SECTION 14: Transport information

International Carriage of Dangerous Goods by Road/Rail (ADR/RID)

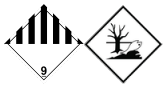
UN number	UN 3082
UN proper shipping name	Environmentally hazardous liquid, N.O.S. Methacrylate Polymer
UN transport hazard class(es)	9 
Packing group	III
Environmental hazards	Marine Pollutant
Special precautions for user	None
Additional Information	This product is not regulated as a dangerous good when transported in sizes of <5L or <5 kg provided the packaging meets the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8

International Carriage of Dangerous Goods by Inland Waterways (ADN)

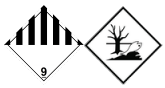
UN number	UN 3082
UN proper shipping name	Environmentally hazardous liquid, N.O.S. Methacrylate Polymer
UN transport hazard class(es)	9 

Packing group	III
Environmental hazards	Marine Pollutant
Special precautions for user	None
Additional Information	This product is not regulated as a dangerous good when transported in sizes of <5L or <5 kg provided the packaging meets the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8

International Maritime Dangerous Goods (IMDG)

UN number	UN 3082
UN proper shipping name	Environmentally hazardous liquid, N.O.S. Methacrylate Polymer
UN transport hazard class(es)	9 
Packing group	III
Environmental hazards	Marine Pollutant
Special precautions for user	None
Additional Information	This product is not regulated as a dangerous good when transported in sizes of <5L or <5 kg provided the packaging meets the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN number	UN 3082
UN proper shipping name	Environmentally hazardous liquid, N.O.S. Methacrylate Polymer
UN transport hazard class(es)	9 
Packing group	III
Environmental hazards	Marine Pollutant
Special precautions for user	None
Additional Information	This product is not regulated as a dangerous good when transported in sizes of ≤5L or 5≤ kg provided the packaging meets the general provisions of 5.0.2.4.1, 5.0.2.6.1 and 5.0.2.8

Transport in bulk according to Annex II of MARPOL and the IBC Code	
Bulk Name	None
Ship type	None
Pollution category	None

SECTION 15: Regulatory information

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

European regulations

Inventory listing (EINECS): All ingredients are listed or exempt.

REACH SVHC candidate list: None of the ingredients are listed.

REACH SVHC Authorizations: None of the ingredients are listed.

REACH Restriction: None of the ingredients are listed.

Water hazard class (WGK) (Product): Not determined.

Water hazard class (WGK) (Substance):

Ingredient Name	CAS	Class
Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-methylprop-2-enoic acid	41637-38-1	Water hazard class 1: slightly hazardous to water
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	72869-86-4	Water hazard class 1: slightly hazardous to water
2-hydroxyethyl methacrylate	868-77-9	Water hazard class 1: slightly hazardous to water
Ethyl phenyl(2,4,6-trimethylbenzoyl)phosphinate	84434-11-7	Water hazard class 2: obviously hazardous to water
Silicon dioxide (amorphous)	7631-86-9	Non-hazardous to water

Other regulations

Germany TA Luft:

Ingredient Name	CAS	Class	Base Emission Rate	Max Concentration
Silicon dioxide (amorphous)	7631-86-9			

Additional information: Not determined.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16: Other information

Abbreviations and Acronyms: None

Classification procedure:

Classification according to Regulation (EC) No. 1272/2008 (CLP)	Method Used
Skin irritation, category 2	Calculation method
Eye Irritation, category 2	Calculation method
Skin sensitization, category 1	Calculation method
Specific target organ toxicity - single exposure, category 3, respiratory tract irritation	Calculation method
Chronic aquatic hazard, category 2	Calculation method

Summary of classification(s) in section 3:

Skin Sens. 1	Skin sensitization, category 1
Skin Irrit. 2	Skin irritation, category 2
Eye Irrit. 2	Eye Irritation, category 2
STOT SE 3 (RI)	Specific target organ toxicity - single exposure, category 3, respiratory tract irritation
Aquatic Chronic 4	Chronic aquatic hazard, category 4
Aquatic Chronic 2	Chronic aquatic hazard, category 2
Skin Sens. 1B	Skin sensitization, category 1B

Summary of hazard statements in section 3:

H317	May cause an allergic skin reaction
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H413	May cause long lasting harmful effects to aquatic life
H411	Toxic to aquatic life with long lasting effects

Disclaimer:

This product has been classified in accordance with EC No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and EC No. 1907/2006 (REACH). The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation, and disposal 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, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

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End of Safety Data Sheet