

Material Safety Data Sheet according to (EC) 1907/2006



Tradename:

BIOCRYL-RESIN Monomer

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

1.1. Product identifier

Name of product: **BIOCRYL-RESIN Monomer**

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

Use of the substance/mixture

Monomer based on Methyl Methacrylate for manufacturing of dental prosthesis, expanding or repairing dental prosthesis, manufacturing of dental regulators and individually formed impression trays.

1.3. Details of the supplier of the safety data sheet

Manufacturer / distributor

SCHEU-DENTAL GmbH
Am Burgberg 20
D-58642 Iserlohn
Tel. +49 (2374) 9288-0
Fax +49 (2374) 9288-90

eMail: service@SCHEU-DENTAL.com
Internet: www.SCHEU-DENTAL.com

1.4. Emergency telephone number: +49 (2374) 9288-0

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

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

Flam. Liq. 2 H225; Skin Irrit. 2 H315; Skin Sens. 1 H317; STOT SE 3 H335
For full text of H phrases see section 16.

2.2. Label elements

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

The product is classified and labelled according to the CLP regulation.

Signal word: **Danger**

Hazard Pictograms: **GHS02 GHS07**



Hazard-determining components of labelling:

methyl methacrylate

Hazard statements

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.

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Precautionary statements

P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P261	Avoid breathing vapours.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P501	Dispose of contents/container to hazardous waste in accordance with local, state or national legislation. Incinerate und approved controlled conditions, using incinerators suitable for the disposal of flammable organics.

2.3. Other hazards

Not classified as PBT or vPvB.

SECTION 3: Composition / information on ingredients**3.1. Substances**

not applicable

3.2. Mixtures

Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below.

Hazardous components	%W/W	EC-No.	Hazard Class and Category Code(s)	Hazard statement code(s)
Methyl Methacrylate	> 95	201-297-1	Flam. Liq. 2 Skin Irrit 2 Skin Sens. 1 STOT SE 3	H225 H315 H317 H335
Ethylenglycol dimethacrylate	< 5	202-617-2	Skin Sens. 1 STOT SE 3	H317 H335
N,N-Dimethyl-p-toluidine	< 1	202-805-4	Acute Tox, oral 3 Acute Tox, dermal 3 Acute Tox, inhal. 3 STOT RE 2 Aquatic Chronic 3	H301 H311 H331 H373 H412

Additional information

For the wording of the listed H-phrases refer to section 16.

SECTION 4: First aid measures**4.1. Description of first aid measures**

- After inhalation:** IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor if you feel unwell.
- After contact with skin:** IF ON SKIN (or hair): Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash before reuse.
- After contact with eyes:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.
- After ingestion:** Do NOT induce vomiting. Rinse mouth. Get immediate medical attention.

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

Causes skin irritation. May cause respiratory irritation. May cause an allergic skin reaction.

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

None necessary.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

water spray, foam, dry powder, CO₂

Unsuitable extinguishing media

Water with full jet.

5.2. Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. May polymerise on heating. Sealed containers may rupture explosively if hot.

5.3. Advice for firefighters

Special protective equipment for fire fighters:

A self-contained breathing apparatus and suitable protective clothing should be worn in the conditions.

Additional information

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures.

Eliminate sources of ignition. Wear protective gloves and eye/face protection. Avoid breathing vapours. See section: 8.

6.2. Environmental precautions

Avoid release to the environment. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Collect spillage. Do not absorb onto sawdust or other combustible materials. Transfer to a lidded container for disposal or recovery. Use only non-sparking tools.

6.4. Reference to other sections

See section: 8, 13

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Do not eat, drink or smoke at the work place. Wash thoroughly after handling. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. The vapour is heavier than air, beware of pits and confined spaces.

Ground container and receiving equipment. Use explosion proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Keep away from heat, sparks, open flame, hot surfaces – No smoking. Protect from sunlight.

IMPORTANT: Methacrylates stored in bulk must be kept in contact with air (oxygen). Monomer vapours are uninhibited and may form polymers in vent or flame arresters, resulting in blockage of vents.

Further information on storage conditions

Storage temperature preferably not exceeding 25 °C.

Storage class:

7.3. Specific end use(s)

No further relevant information available.

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SECTION 8: Exposure controls / personal protection**8.1. Control parameters**

Substance	EC No.	LTEL ppm (8 h TWA)	LTEL mg/m ³ (8 h TWA)	STEL ppm	STEL mg/m ³	Notes
Methyl Methacrylate	201-297-1	50	208	100	416	WEL, IOELV

DNEL	Oral	Inhalation	Dermal
Worker – Long Term – Local effects	¹	210 mg/m ³	1,5 mg/cm ²
Worker – Long Term – Systemic effects	¹	210 mg/m ³	13,67 mg/kg body weight/day
Worker – Short Term – Local effects	¹	²	1,5 mg/cm ²
Worker – Short Term – Systemic effects	¹	²	³
Consumer – Long Term – Local effects	¹	105 mg/m ³	1,5 mg/m ²
Consumer – Long Term – Systemic effects	¹	74,3 mg/m ³	8,2 mg/kg body weight/day
Consumer – Short Term – Local effects	¹	²	1,5 mg/cm ²
Consumer – Short Term – Systemic effects	¹	²	³

	PNEC
Aquatic Compartment	0,94 mg/l (Fresh water) 0,094 mg/l (Sea water) 5,74 mg/kg dry weight (sediment)
Terrestrial Compartment	1,47 mg/kg dry weight

¹ Oral toxicity: DNEL not established² Long term DNEL ist protective of effects resulting from short term exposure³ Dermal toxicity: DNEL not established

Substance	EC No.
N, N-Dimethyl-p-toluidine	202-805-4

DNEL	Oral	Inhalation	Dermal
Worker – Long Term- Systemic effects	¹	1,35 mg/m ³	1,19 mg/kg
Consumer – Long Term – Systemic effects	2,37 mg/kg	0,34 mg/m ³	0,29 mg/kg

	PNEC
Aquatic Compartment	0,153 mg/l (Fresh water) 0,0153 mg/l (Sea water) 45,38 mg/kg dry weight (sediment)
Terrestrial Compartment	18,68 mg/kg dry weight

¹ Oral toxicity: DNEL not established**8.2. Exposure controls****Appropriate engineering controls**

Do not eat, drink or smoke at the work place. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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Individual protection measures, such as personal protective equipment (PPE)**Eye/face protection**

Wear eye/face protection.

Skin protection

Wear suitable gloves.

The most appropriate glove depends on consideration of a number of factors including the physical strength of the glove, the degree of manual dexterity required, the amount of permeation through the glove material and the duration of wear. There are a wide variety of elastomeric and laminate gloves available. Common elastomeric glove material include latex (natural rubber), neoprene (poly isoprene), nitrile rubber (ABS rubber), butyl rubber, polyvinyl alcohol (PVA), polyvinyl chloride (PVC) and Fluoroelastomers. Laminate gloves are made from heat sealed sheets of PVA between layers of polyethylene. In permeations tests PVA/Polyethylene laminate and supported PVA gloves performed best (note that PVA can be rendered ineffective by contact with water if the laminate layer is breached). Butyl and nitrile rubber gloves offer short-term protection. Later surgical gloves offer little protection. Gloves should be stored correctly and changed regularly, especially if excessive exposure has occurred.

Respiratory protection

Wear suitable respiratory protective equipment if engineering controls are insufficient, or not present, and exposure to levels above the DNEL is likely. A suitable mask with filter type A (EN141 or EN405) may be appropriate.

Other

Keep working clothes separately. Take off contaminated clothing immediately. Keep away from food, drinks and animal feed.

Environmental exposure controls

Ensure effective control measures when working within the boundaries as specified in section 6.2 of each GES.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties**General Information**

Physical state:	Liquid
Colour:	Clear/ colourless
Odour:	Ester-like, characteristic strong and acrid
pH-value:	Not applicable
Melting point:	-48 °C
Initial boiling point and boiling range:	100,5 °C
Flash point:	10 °C
Flammable limits (lower) (% v/v)	2.1
Flammable limits (upper) (% v/v)	12,5
Vapour pressure:	3.600 Pa at 20 °C
Solubility (water):	Slightly soluble, 1.6 % at 20 °C
Solubility (other):	Miscible with most organic solvents
Auto ignition temperature:	421 °C
Explosive properties:	Not applicable
Oxidising properties:	Not applicable
Relative density:	0,94 (Water = 1) at 15,5 °C

9.2. Other information

Minimum Ignition Energy (mJ): 0,89 – 0,97 at 23 °C

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SECTION 10: Stability and reactivity**10.1. Reactivity**

Will exothermically polymerise in the presence of initiators.

10.2. Chemical stability

Stable in the presence of inhibitor.

10.3. Possibility of hazardous reactions

Susceptible to polymerisation initiated by prolonged storage or the presence of catalyst.

10.4. Conditions to avoid

Heat and direct sunlight.

10.5. Incompatible materials

Polymerisation catalysts, such as peroxy or azo compounds, strong acids, alkalis and oxidising agents. Oxides and salts of transition metals. Organic Nitrogen containing compounds. Cydohexanone/Cydohenol tautomer.

10.6. Hazardous decomposition products

Does not decompose up to auto-ignition temperature.

SECTION 11: Toxicological Information**11.1. Information on toxicological effects**

(Based on MMA)

Acute toxicity

Ingestion	Low oral toxicity, but ingestion may cause irritation of the gastrointestinal tract.
Ingestion toxicity data	LD50 (Oral) >5000 mg/kg N,N-Dimethyl-p-toluidine (100 %) LD50 (oral) = 1767 mg/kg
Ingestion STOT-single exposure	Not applicable.
Inhalation	May cause respiratory irritation. May cause drowsiness or dizziness.
Inhalation toxicity data	LC50 (vapour) 7093 pp, (29,8 mg/l) (4h) N,N-Dimethyl-p-toluidine (100 %) LC50 (vapour) = 1,4 mg/l
Inhalation STOT-single exposure	Exposure to high concentrations may produce adverse effects on the nasal epithelium.
Skin contact	May cause an allergic skin reaction. Causes skin irritation. repeated and/or prolonged contact may cause dermatitis.
Skin contact toxicity data	LD50 (dermal) > 5000 mg/kg N,N-Dimethyl-p-toluidine (100 %) > 2000 mg/kg
Skin contact STOT-single exposure	Not applicable.
Eye Contact	High vapour concentration will cause irritation.
Eye contact toxicity data	Slight irritant to rabbit eyes. (OECD 405)
Eye STOT-single exposure	Not applicable.
Aspiration hazard data	Not an aspiration hazard.

Sensitization

Skin sensitization data	Skin sensitization has been reported in studies with guinea pigs (OECD 406) Evidence of contact sensitization in man.
Respiratory sensitization data	Not a respiratory sensitizer. Irritant to the respiratory system and high concentrations may aggravate pre-existing conditions.

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Carcinogenicity data	No evidence of carcinogenicity. (OECD 451)
Germ cell mutagenicity data	Salmonella typhimurium (TA 1535, 153, 97, 98,100) negative (OECD 71) Teratogenic and fetotoxic effects only observed in presence of material toxicity. NOAEC (Mouse) = 9.000 ppm NOAEC (Rat) >2.028 ppm

Repeated exposure toxicity

Chronic exposure	Repeated exposure to high levels produces adverse effects on the heart, lungs, liver and kidneys. Repeated exposure of animals by inhalation to levels at or above the occupational exposure level produces adverse effects on the nasal epithelium (levels of 100 and 40 ppm). There is no reason to believe that Methyl Methacrylate represents a carcinogenic or mutagenic hazard to man based upon evidence from well conducted animal studies, relevant mutagenicity studies and adequate epidemiology studies in relevant cohorts. Recent studies in animals have shown that high exposures do not produce embryo or fetotoxic nor teratogenic effects in the presence of material toxicity.
STOT – repeated exposure data	NOEL (oral) (rat) (104 weeks) 2000 ppm NOAEC (inhalation) (rat) (104 weeks) 100 ppm (OECD 453) NOAEC (inhalation) (mouse) (14 weeks) 1000 ppm (OECD 412)

SECTION 12: Ecological Information

12.1. Toxicity**Aquatic toxicity:**

Low toxicity to fish.

MMA (100 %) LC50 (fish) (typically) >100 mg/l

MMA (100 %) LC50 (fathead minnow) (96 hour) (static) 130 mg/l

DMPT (100 %) LC50 (fish) (96 hour) 46 – 52 mg/l

Harmful to aquatic invertebrates.

MMA (100 %) EC50 (Daphnia magna) (48 hour) 69 mg/l

Low toxicity to algae

MMA (100 %) EC50 (selenastrum capricornutum) (96 hours) 170 mg/l

MMA (100 %) NOEC (zebra fish) (35 days) (flow through) 8,4 mg/l

The product is substantially removed in biological treatment processes.

12.2. Persistence and degradability

Readily biodegradable.

MMA (100 %) Chemical Oxygen Demand (COD): 88 % (28 days)

Inherent biodegradation:

Dissolved Organic Carbon Removal (DOC removal): > 95 % (28 days)

12.3. Bioaccumulative potential

The product has low potential for bioaccumulation.

12.4. Mobility in soil

The product is predicted to have high mobility in soil

12.5. Results of PBT and vPvB assessment

Not classified as PBT or vPvB

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12.6. Other adverse effects

Not subject to international restrictions.


SECTION 13: Disposal considerations

Avoid release to the environment. Decontaminate empty drums before recycling.


13.1. Waste treatment methods

Dispose of contents/container to hazardous waste in accordance with local., state or national legislation. Incinerate under approved controlled conditions, using incinerators suitable for the disposal of flammable organics.


SECTION 14: Transport Information**Land transport (ADR/RID)**

14.1. UN number:	1247	
14.2. UN proper shipping name:	METHYL METHACRYLATE MONOMER, STABILIZED	
14.3. Transport hazard class(es):	3	
14.4. Packing group:	II	
Hazard label:	3	
Classification code:	F1	
Limited quantity:	1 L	
Transport category:	2	
Hazard No:	339	
Tunnel restriction code:	D/E	
Other applicable information (land transport)		

Inland waterways transport (ADN)

14.1. UN number:	1247	
14.2. UN proper shipping name:	METHYL METHACRYLATE MONOMER, STABILIZED	
14.3. Transport hazard class(es):	3	
14.4. Packing group:	II	
Hazard label:	3	
Classification code:	F1	
Limited quantity:	1 L	
Other applicable information		

Marine transport (IMDG)

14.1. UN number:	1247	
14.2. UN proper shipping name:	METHYL METHACRYLATE MONOMER, STABILIZED	
14.3. Transport hazard class(es):	3	
14.4. Packaging group:	II	
Hazard label:	3	
Limited quantity:	1 L	
EmS:	F-E,S-D	
Other applicable information (marine transport):		

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Air transport (ICAO)

14.1. UN number:	1247	
14.2. UN proper shipping name:	METHYL METHACRYLATE MONOMER, STABILIZED	
14.3. Transport hazard class(es):	3	
14.4. Packaging group:	II	
Hazard label:	3	
Limited quantity Passenger:	1 L	
IATA-packing instructions - Passenger:	353	
IATA-max. quantity - Passenger:	5 L	
IATA-packing instructions - Cargo:	364	
IATA-max. quantity - Cargo:	60 L	
Other applicable information (air transport)	E2	
Passenger-LQ:	Y341	

14.6. Special precautions for user

Warning: Flammable liquids.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable

Section 15. Regulatory Information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Safety, health and environmental regulations/legislation specific for the substance or mixture Regulation (EC) No. 1272/2008 (Classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 107/2006. Directive 2009/161/EU (third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC).

15.2. Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for Methyl Methacrylate.

SECTION 16: Other Information

This Safety Data Sheet was prepared in accordance with EC Regulation (EC) No. 453/2010.

Abbreviations and acronyms (not all of the following are necessarily contained in this Safety Data Sheet)

ADR:	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG:	International Maritime Code for Dangerous Goods
IATA:	International Air Transport Association
GHS:	Globally Harmonized System of Classification and Labelling of Chemicals
EINECS:	European Inventory of Existing Commercial Chemical Substances
ELINCS:	European List of Notified Chemical Substances
CAS:	Chemical Abstracts Service
LC50:	Lethal concentration, 50 %
LD50:	Lethal dose, 50 %

Relevant H- and EUH-phrases (number and full text)

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.

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P210	Keep away from heat, sparks, open flame, hot surfaces – No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilating/lighting/.../equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing vapours.
P264	Wash (hands and exposed skin) thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P303+P361+P353	IF ON SKIN (of hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water / shower.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312	Call a POISON CENTRE or doctor if victim feels unwell.
P321	Specific treatment (see on this label).
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P363	Wash contaminated clothing before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to hazardous waste in accordance with local, state or national legislation. Incinerate under approved controlled conditions, using incinerators suitable for the disposal of flammable organics.

Further information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.