

Safety data sheet

Carbon-Acryl-Harz

Uniprox Safety data sheet in accordance with regulation (EC) 1907/2006

Product: Carbon-Acryl-Harz (MG113)

Date/ Revised: 11.11.2013

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1. Substance/preparation and company identification

Trade name: Carbon-Acryl-Harz

Application of the substance/ the preparation: Resin for orthopaedic technology

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2. Hazard identification

2.1 Classification of the substance or mixture

This mixture is classified as hazardous according to CLP/GHS

Regulation (EC) No 1272/2008

Flammable liquids	Hazard category 2	H225
Caustic burning / irritation of skin	Hazard category 2	H315
Skin Sensitisation	Hazard category 1 B	H317
Specific Target Organ Toxicity - Single exposure	Hazard category 3	H335

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word

Danger

GHS pictogram



hazard statement

Highly flammable liquid and vapour. (H225)

Causes skin irritation. (H315)

May cause an allergic skin reaction. (H317)

May cause respiratory irritation. (H335)

Safety notice (general)

Wear protective gloves/protective clothing/eye protection. (P280)

Precautionary Statement (Prevention)

Avoid release to the environment. (P273)

Precautionary Statement (Response)

Call a POISON CENTER/doctor if you feel unwell. (P312)

IF INHALED: Remove person to fresh air and keep comfortable for breathing.(P304 + P340).

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. (P303 + P361 + P353)

Precautionary Statement (Disposal)	Dispose of contents/container in accordance with local regulation. (P501)
Further Information	Nota D
Hazardous component(s) for Labelling	contains methyl methacrylate

Directive 67/548/EC or Directive 1999/45/EC

Labelling in accordance with directive 1999/45/EC	requires labelling
Hazardous component(s) for Labelling	contains methyl methacrylate
hazard symbol(s)	F Highly flammable Xi Irritant
R-phrase(s)	11 Highly flammable. 37/38 Irritating to respiratory system and skin. 43 May cause sensitisation by skin contact.
S-phrase(s)	16 Keep away from sources of ignition --- No smoking. 24 Avoid contact with skin. 37 Wear suitable gloves.

2.3. Other hazards

electrostatic charge

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

3. Composition/information on ingredients

3.1. Substances

3.2. Mixtures

Regulation (EC) No 1272/2008

Component	EINECS-No. REACH-No. CAS-No.	Content	Hazard class / Hazard category / Hazard statement
methyl methacrylate	201-297-1 01-2119452498-28 80-62-6	40.0 - 70.0 %	Flam. Liq. 2; H225 Skin Irrit. 2; H315 Skin Sens. 1; H317 STOT SE 3 (inhalation); H335
N,N-bis-(2-hydroxypropyl)-ptoluidine	254-075-1 - 38668-48-3	0.1 - 1.0 %	Acute Tox. 2 (oral); H300 Eye Irrit. 2; H319 Aquatic Chronic 3; H412

Hazardous Ingredients as per Directive 67/548/EC or Directive 1999/45/EC

Component	CAS Number	Hazard symbol(s) / R-phrases		Content
methyl methacrylate	80-62-6	F, Xi	11-37/38-43	40.0 - 70.0 %
N,N-bis-(2-hydroxypropyl)-p-toluidine	38668-48-3	T	28-36-52/53	0.1 - 1.0 %

4. First-aid measures

4.1. Description of first aid measures

General advice 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.

Inhalation Move subject to fresh air and keep him calm. See a physician.

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 Sensitisation, Skin irritation, Excessive or prolonged exposure can cause the following:, Headache, confusion

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

No

5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media foam, dry chemical, carbon dioxide

Extinguishing media which must not be used for safety reasons water

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

Wear self-contained breathing apparatus.

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.

6.2. 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.

7. Handling and storage

7.1. Precautions for safe handling

Safe handling advice Ensure there is good room ventilation. Keep container tightly closed.

Advice on protection against
fire and explosion Keep away from sources of ignition --- No smoking. Take precautionary measures against static discharges. In the event of fire, cool the endangered containers with water. When heated above the flash point and/or during spraying (atomizing), ignitable mixtures may form in air. Use only explosion-proof equipment.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas

And Containers Keep only in the original container at a temperature not exceeding 25 °C. Protect from the action of light. Fill the container by approxi-mately 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.

8. Exposure controls and personal protection

Control parameters

Components or products of decomposition according to point 10, with limit values related to the place of work which require monitoring

methyl methacrylate 80-62-6

WEL (long-term) 2009	208 mg/m ³	50 ppm
WEL (short-term) 2009	416 mg/m ³	100 ppm

Indicative occupational exposure limit value 2009/161/EC 2009		50 ppm
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Indicative occupational exposure limit value 2009/161/EC (15 minutes) 2009		100 ppm
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8.2. Exposure 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

Protective measures Do not breathe vapours. Avoid contact with eyes and skin.

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.

Respiratory protection	Breathing apparatus in case of high concentrations, short term: filter appliance, filter A
Hand protection	butyl rubber gloves (0.7 mm), Break through time ca. 60 min (EN 374). In practice, due to variable exposure conditions, this information can only be an aid to orientation for the selection of a suitable chemical protection glove. In particular, this information does not substitute suitability tests by the end user.
General information	Gloves should be replaced regularly, especially after extended contact with the product. For each workplace a suitable glove type has to be selected.
Eye protection	tightly fitting goggles
Skin and body protection	On handling of larger quantities: face mask, chemical-resistant boots and apron

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	liquid
Colour	colourless
Odour	ester-like
Freezing Temperature	not available
Boiling Temperature	100.5 °C(methyl methacrylate)
Flash point	10 °C (methyl methacrylate)
Ignition temperature	430 °C (methyl methacrylate)
Lower explosion limit	2.1 %(V) (methyl methacrylate)
Upper explosion limit	12.5 %(V) (methyl methacrylate)
Vapour pressure	38.7 hPa (20 °C) (methyl methacrylate)
Density	ca. 1 g/cm ³ (20 °C)
Relative vapour density (related to air)	> 1 (20 °C)
Solubility in water	ca. 16 g/l (methyl methacrylate)
pH	not applicable
Viscosity (dynamic)	ca. 400 mPa·s

9.2. Other information

none

10. Stability and reactivity

10.1. Reactivity

see section 10.2.

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.

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.

11. Toxicological information

11.1. Information on toxicological effects

Acute Oral Toxicity

LD50 rat, OECD 401, Related to substance: methyl methacrylate > 5,000 mg/kg

LD50 rat, Related to substance: N,N-bis-(2-hydroxypropyl)-ptoluidine 25 - 200mg/kg

Acute Inhalational Toxicity

LC50 rat, Related to substance: methyl methacrylate, Low toxicity
by inhalation 29.8 mg/l

Acute Dermal Toxicity

LD50 rabbit, Related to substance: methyl methacrylate,
Practically non-toxic in contact with skin > 5,000 mg/kg

Caustic burning / irritation of skin

Contact with skin may cause irritations. Related to substance: product

Serious eye damage/eye irritation

Contact with the eyes may cause irritation. Related to substance: product

Respiratory/skin sensitization

In sensitization tests on guinea pigs with and without adjuvant,
both positive and negative results were found. In humans various
types of allergic reactions have been observed
(symptoms: headache, eye irritations, skin affections).

Related to substance: methyl methacrylate

Aspiration hazard

not applicable

Mutagenicity assessment

Positive as well as negative results in *in vitro* mutagenicity/ genotoxicity tests.

No experimental indication of genotoxicity *in vivo* available.

In summary not mutagenic according to internationally accepted criteria.

Related to substance: methyl methacrylate

Carcinogenicity

Non-carcinogenic in inhalation and feeding studies carried out on rats, mice and dogs.

Related to substance: methyl methacrylate

Reprotoxicity / teratogenicity No indications of toxic effects were observed in
reproduction studies in animals.

Related to substance: methyl methacrylate

Human health hazard assessment

CMR: no

Genotoxicity in vitro

salmonella typhimurium +/-not mutagenic (Ames-test)

mouse lymphoma L 5178 Y TK+/- cells +/-mutagenic

Toxicity on Repeated Administration

rat, inhalation, 2 Years

Findings: Damage to mucous membranes in the nose at 400 ppm

Related to substance: methyl methacrylate

rat, in drinking water, 2 Years

Findings: no toxic effects

Related to substance: methyl methacrylate

General information

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

12. Ecological information**12.1. Toxicity**

Aquatoxicity, fish LC50 Oncorhynchus mykiss, rainbow trout, OECD 203,
flow through, GLP, 96 h
Related to substance: methyl methacrylate **> 79 mg/l**

Aquatoxicity, invertebrates
EC50 Daphnia magna, OECD 202, flow through, 48 h
Related to substance: methyl methacrylate **69 mg/l**
NOEC Daphnia magna, OECD 202 part 2, flow through, 21 d
Related to substance: methyl methacrylate **37 mg/l**

Aquatoxicity, algae / aquatic plants
EC3 Scenedesmus quadricauda, DIN 38412 section 9, 8 d
Related to substance: methyl methacrylate **37 mg/l**
Toxicity in microorganisms
EC0 Pseudomonas putida
Related to substance: methyl methacrylate **100 mg/l**

12.2. Persistence and degradability

Biodegradability readily biodegradable, OECD 301 C, 14 d
Related to substance: methyl methacrylate **94 %**

12.3. Bioaccumulative potential

Bioaccumulation no specific test data available
no evidence for hazardous properties
(structure-activity-relationships)
(analogy)

12.4. Mobility in soil

Mobility no specific test data available

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment
PBT: no
vPvB: no

12.6. Other adverse effects

General Information Prevent substance from entering soil, natural bodies of water and sewer systems.

13. Disposal considerations

13.1. Waste treatment methods

Product	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.
Uncleaned 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.
Code of waste	EWC 07 02 08 waste from the manufacture, formulation, supply and use (MFSU) of plastics, synthetic rubber and man-made fibres - other still bottoms and reaction residues Always check the given waste codes according to the actual conditions of manufacturing, formulation or use in your facilities.

14. Transport information

14.1. UN number

see section 14.2.

14.2. UN proper shipping nameLand transport ADR/GGVSEB

UN 1866 RESIN SOLUTION, 3, II, (D/E)

Hazard no. 33

Land transport RID/GGVSEB

UN 1866 RESIN SOLUTION, 3, II

Hazard no. 33

Inland waterway transport ADN/GGVSEB (Germany)

UN 1866 RESIN SOLUTION, 3, II

Shipment by sea IMDG/GGVSee

UN number 1866

Class 3

EmS F-E, S-E

Marine pollutant No

Packaging group II

Proper Shipping Name RESIN SOLUTION

Air transport ICAO/IATA

UN number 1866

Class 3

Packaging group II

Proper Shipping Name RESIN SOLUTION

Remarks

ADR Special provision 640D

RID Special provision 640D

ADNR Special provision 640D

14.3. Transport hazard class(es)

see section 14.2.

14.4. Packing group

see section 14.2.

14.5. Environmental hazards

if not mentioned in Point 14.2 then it does not apply

14.6. Special precautions for user

see section 14.2.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
for transport approval see regulatory information

15. Regulatory information

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

National legislation

Occupational restrictions Note for juveniles. Note for pregnant woman and nursing mothers (EC Directive 92/85/EEC).

Chemical safety assessment No chemical safety assessment was carried out for this product.

Status of Registration

REACH (EU) preregistered, registered or exempted

TSCA (USA) listed or exempted

DSL (CDN) listed or exempted

ECL (KOR) listed or exempted

PICCS (RP) listed or exempted

IECSC (CN) listed or exempted

ECS (Taiwan) listed or exempted

16. Other information

Miscellaneous 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.

Relevant H phrases from chapter 3	methyl methacrylate H225 Highly flammable liquid and vapour. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H335 May cause respiratory irritation.
	N,N-bis-(2-hydroxypropyl)-p-toluidine H300 Fatal if swallowed. H319 Causes serious eye irritation. H412 Harmful to aquatic life with long lasting effects.
R-phrases of relevance from chapter 3	11 Highly flammable. 28 Very toxic if swallowed. 36 Irritating to eyes. 37/38 Irritating to respiratory system and skin. 43 May cause sensitisation by skin contact. 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

The information refers explicit to the indicated product. In opinion of the Uniprox GmbH & Co. KG this information is right and reliable at the time of the generation. Uniprox GmbH & Co. KG don't assume an express or silent warranty concerning to its correctness, reliability or completeness. Everybody who received this information is requested by the Uniprox GmbH &

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