

E.C.Safety Data Sheets according with regulation (EC) 1907/2006 Tradename: megabond (Liquid)	megadental GmbH Seeweg 20 D-63654 Büdingen Status: 10.09.2013 Page: 1 / 6 megabond_SDB_EN.doc
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1. Identification of the substance/preparation and of the company/undertaking

Information on the product

Trade name: **megabond**

Use / Purpose: Auxiliary material, used as a form of bonding agent, to assure adhesion between synthetic teeth and denture base resin.

Information on the manufacturer megadental GmbH
Seeweg 20
D-63654 Büdingen
Tel: +49(0) 6042-97550
FAX: +49(0)6042-975520
Quality Management Mr. Murat Büyük

2. Hazards identification

Hazard symbols



Highly flammable



Harmful

Special guidelines concerning dangers to humans and the environment

Highly flammable. Irritating to respiratory system and skin. May cause sensitization by skin contact.
Limited evidence of a carcinogenic effect.

3. Composition/information on ingredients

Chemical characterization

Description

Solvent based on methyl methacrylate and methylene chloride

Hazardous ingredients

Methyl methacrylate

Concentration 30 to 60%
Chemical formula $C_5H_8O_2$
CAS Number. 80-62-6
EINECS Number. 201-297-1
INDEX Number 607-035-00-6
Hazard symbols F, Xi
R-phrases 11-37/38-43

Methylene chloride

Concentration 20 to 40 %
Chemical formula CH_2Cl_2
CAS Number. 75-09-2
EINECS Number. 200-838-9
INDEX Number 612-056-00-9
Hazard symbols Xn
R-phrases 40

4. First aid measures

General Information:

Remove soaked clothing immediately. Medical treatment is necessary if symptoms occur that are obviously caused by skin or eye contact with the product or by inhalation of its vapours. Symptoms of poisoning may not appear for several hours. Keep under medical supervision for at least 48 hours.

After inhalation:

In case of inhalation remove casualty to fresh air and allow to rest. If necessary, apply mouth-to-mouth resuscitation or mechanical ventilation. Seek medical advice.

After contact with skin:

In case of contact with skin wash off immediately with soap and water. If skin irritation occurs, seek medical advice.

After contact with eyes:

In case of contact with eyes rinse thoroughly with plenty of water while keeping the eyelids apart. If irritation persists seek medical advice.

After ingestion:

Do not induce vomiting. Seek medical advice immediately.

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5. Fire-fighting measures

Suitable extinguishing media

Foam, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons

Water, halide fire equipment

Specific hazards during fire fighting

In case of fire hazardous decomposition products may be produced such as: Carbon monoxide, Hydrogen chloride gas, Phosgene, Chlorine.

Special protective equipment for fire fighters

In the event of fire, wear self-contained breathing apparatus (full protective suit).

6. Accidental related measures

Personal precautionary measures

Assure appropriate air-flow. Wear protective clothing. Keep away sources of ignition. Use breathing apparatus if exposed to vapours/dust/mist/aerosol.

Environmental protection measures

Do not allow to get into drains/surface water/groundwater

Measures for cleaning

Large quantities:

Remove mechanically (hydraulic pump). Assure explosion-safe measures!

smaller quantities: Pick up with liquid absorbing material (sand, diatomaceous earth, acid absorbent, sawdust or tissues)

7. Handling and storage

Instructions on safe handling

Keep container well closed. Assure appropriate air-flow. Store in cool, dry place. Ensure good ventilation/exhaustion at the workplace. Ensure that suitable extractors are available on processing machines. Take note of emission threshold. Used solvent-proof equipment.

Information on fire and explosion protection

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.

8. Exposure controls/personal protection

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

LT-Value for

Methyl methacrylate 210 mg/m³

CAS-Number 80-62-6

maximum limitation category I

Remarks

Y: Danger of damage to unborn children is not to be expected as long as the LT-value does not exceed above mentioned amount.

LT-Value for

Methylene chloride 260 mg/m³

CAS-Number 75-09-2

maximum limitation category II

KMR-Classification Carc. Cat 3

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General protective measures:

Do not inhale vapours. Avoid contact with eyes and skin.

Hygiene measures:

Keep working clothes away from regular clothing. Take off contaminated clothes immediately. Follow the regular standards of occupational hygiene. Clean skin thoroughly after work; apply skin cream.

Respiratory protection:

Breathing apparatus in case of high concentrations

Eye protection:

Wear protective goggles.

Body protection:

When handling larger quantities wear face shield, apron and chemical resistant boots.

Hand protection:

Wear protective gloves made of butyl rubber (0,7mm), break through time 300 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 user.

general information:

Gloves should be changed regularly, especially after over excessive contact with the product. A different type of glove should be considered for each workplace.

9. Physical and chemical properties

Appearance

Form: Liquid
Colour: Colourless
Odour: Ester-like, slightly sweet, stinging

Changes in physical state (related to the component methyl methacrylate)

Melting temperature: -48 °C
Boiling temperature: 100 °C (at 1.013 hPa)
Flashpoint: 10 °C (DIN 51755)
Ignition temperature: 430 °C (DIN 51794)
Self ignition ability: not determined
lower explosion limit: 2,1 %(V) (at 20 °C)
upper explosion limit: 12,5 % (V)
vapour pressure: 38,7 hPa (at 20 °C)
Density: 0,94 g/cm³ (at 20 °C)
Relative vapor density related to air: > 1 (at 20 °C)
solubility in water: 15,9 g/l (at 20 °C)
qualitative solubility: miscible with most organic solvents
pH-value: not applicable
n-octanol/water partition coefficient: log Pow 1,38 (measured)
dynamic viscosity: 0,63 mPa.s (at 20 °C, Brookfield)
further information: none

Changes in physical state (related to the component methylene chloride)

Melting temperature: -97 °C
Boiling temperature: 40 °C (at 1.013 hPa)
Flashpoint: Not applicable
Ignition temperature: 605 °C (DIN 51794)
Self ignition ability: not determined
Lower explosion limit: 13 %(V)
Upper explosion limit: 22 % (V)
Vapour pressure: 475 hPa (at 20 °C)
Density: 1,33 g/cm³ (at 20 °C)
Solubility in water: 20 g/l (at 20 °C)
Qualitative solubility: miscible with most organic solvents
pH-value: not applicable

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N-octanol/water partition coefficient	log Pow 1,25 (measured)
Dynamic viscosity:	0,43 mPa.s (at 22 °C, Brookfield)
Further information	None

10. Stability and reactivity

Thermal decomposition:

Do not exposure heat.

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. Materials to avoid aluminium zinc oxidizing agents strong acids alkalines.

Hazardous decomposition products:

Hydrogen chloride gas; Carbon monoxide; phosgene.

11. Toxicological information

The following information is related to the component methyl methacrylate.

Acute oral toxicity:	>5.000 mg/kg; practically non-toxic if swallowed; LD50 rat, OECD 401
Acute inhalational toxicity:	29,8 mg/l; low toxicity by inhalation; LC50 rat, exposure 4h
Acute dermal toxicity:	>5.000 mg/kg; practically non-toxic in contact with skin; LD50 rabbit
Irritant effect on skin:	not irritating; rabbit; exposure 24h; FDA 1959 Draize, occlusive
Irritant effect on eyes:	not irritating; rabbit; Draize

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).

Toxicity on repeated administration:

NOAEL 25ppm; at said dosis no adverse effects were observed. At higher doses adverse effects were observed; rat; inhalative 2 a, 25-400ppm (Findings: damage to mucous membranes in the nose at 400ppm)
NOAEL 2000ppm; rat; drinking water 2 a, 6-2000ppm (Findings: no toxic effects)

Mutagenicity:

Positive as well as negative results within in vitro mutagenicity / genotoxicity tests. No experimental indication of genotoxicity in vivo available. In summary **not mutagenic** according to internationally accepted criteria.

Carcinogenicity:

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

Reprotoxicity / teratogenicity:

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

Additional information:

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

The following information is related to the component methylene chloride.

Acute oral toxicity:	1600 mg/kg; ; LD50 rat, OECD 401
Acute inhalational toxicity:	88 mg/l; LC50 rat, exposure 30min.
Irritant effect on skin:	Prolonged skin contact may defat the ski and produce dermatitis. May cause irritation of the mucous membranes.
Irritant effect on eyes:	May have irritant effects.
Sensitization:	Did not cause sensitization on laboratory animals.

Further information

Inhalation of high vapour concentrations can cause CNS-depression and narcosis. Severe effects after repeated or prolonged exposure. Risk of serious damage to the lungs (by inhalation). Liver injury may occur. Ingestion causes damage of central nervous system, liver, kidneys, blood and bone marrow. Limited evidence of a carcinogenic effect. Handle in accordance with good industrial hygiene and safety practice.

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12. Ecological information

Information on elimination (persistence and degradability)

Biodegradability:

readily degradable, ca. 94 %

Methyl methacrylate Method: OECD 301 C, 14d

Biodegradability:

Methylene chloride

Not readily biodegradable

Ecotoxicological effect

Fish toxicity (LC50): > 79 mg/l

Oncorhynchus mykiss, rainbow trout, OECD 203 GLP, 96h

Daphnia toxicity (EC50): 69 mg/l

Daphnia magna, OECD 202, 48h

Algae toxicity (EC3): 37 mg/l

Scenedesmus quadricauda, DIN 38412 section 9, 8d

Algae toxicity (EC50) 170 mg/l

Selenastrum capricornutum, OECD 201, 96h

Bakteria toxicity (EC0) 100 mg/l

Pseudomonas putida

Additional ecological information

Do not allow to enter soil, waterways or waste water.

13. Disposal considerations

Product

Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Dispose of as special waste in compliance with local and national regulations. Waste codes should be assigned by the user based on the application for which the product was used.

Packaging

Empty remaining contents. Risk of explosion. Do not burn, or use a cutting torch on, the empty drum. Empty containers should be taken for local recycling or waste disposal. Dispose of as unused product. Dispose of in accordance with local regulations.

14. Transport information

Overland transport

ADR/RID/GGVSE

Class: 3 FLAMMABLE LIQUID, TOXIC, N.O.S

Risk Number: 33

UN Number: 1993

Packaging group: II

Label: 3

Limited Quantity LQ4



Inland waterway transport

ADNR

Class: 3 FLAMMABLE LIQUID, TOXIC, N.O.S

UN Number: 1993

Packaging group: II

Label: 3



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Shipment by sea

IMDG/GGVSee

Class: 3 FLAMMABLE LIQUID, TOXIC, N.O.S
UN Number: 1993
EmS: F-E, S-D
Marine pollutant: -
Packing group: II
Proper Shipping Name: FLAMMABLE LIQUID, TOXIC, N.O.S



Air transport

ICAO/IATA

Class: 3 FLAMMABLE LIQUID, TOXIC, N.O.S
UN Number: 1993
Packing group: II
Proper Shipping Name: FLAMMABLE LIQUID, TOXIC, N.O.S



15. Regulatory information

Labelling in accordance to EC directive GefStoffV

requires labelling

Hazardous component for labelling

contains methyl methacrylate and methylene chloride

Hazard symbols

F Highly flammable
Xn Harmful

Risk phrases (R-phrases)

11 Highly flammable
37/38 Irritating to respiratory system and skin
40 Limited evidence of a carcinogenic effect
43 May cause sensitization by skin contact

Safety phrases (S-phrases)

23 Do not breathe gas/fumes/vapour/spray
24/25 Avoid contact with skin and eyes
36/37 Wear suitable protective clothing and gloves
46 If swallowed, seek medical advice immediately and show this container or label

National regulations (for Germany only)

Technical regulation for air 5.2.5
Water hazards class 1 (VwVwS, Annex 2)

Occupational restrictions

- Note for juveniles
- Note for pregnant women and nursing mothers

16. Other information

This 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.

References

Relevant manuals and publications, toxicological and ecological studies of different manufacturers. (SIAR, OECD-SIDS, RTK public files)

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