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

1.1 Product identifier

MD-Clearbond Part A
Article number MMB.C.S50

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

1.2.1 Relevant uses

Adhesive

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

Marston Domsel GmbH
Bergheimer Str. 15
53909 Zülpich / GERMANY
Phone 0 22 52 / 94 15 - 0
Fax 0 22 52 / 17 44
Homepage www.marston-domsel.de
E-mail info@marston-domsel.de

Address enquiries to

Technical information info@marston-domsel.de

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency phone

Advisory body +49 (0)89-19240 (24h) (english)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Flam. Liq. 2: H225 Highly flammable liquid and vapour.
Skin Irrit. 2: H315 Causes skin irritation.
Eye Irrit. 2: H319 Causes serious eye irritation.
Skin Sens. 1: H317 May cause an allergic skin reaction.
STOT SE 3: H335 May cause respiratory irritation.
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects.

2.1.2 Classification according to Regulation 67/548/EEC or 1999/45/EC

F, Highly flammable - R 11: Highly flammable.
Xi, Irritant - R 36/37/38: Irritating to eyes, respiratory system and skin.
Sensitizing. - R 43: May cause sensitisation by skin contact.

2.2 Label elements

The product is classified and required to be labelled in accordance with EC-Directives

Labelling according to Regulation (EC) 1272/2008

Hazard pictograms

Signal word DANGER

Contains: Methyl methacrylate
2-Hydroxyethyl methacrylate
Methacrylic acid

Hazard statements
H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/eye protection/face protection.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.

2.3 Other hazards

Physico-chemical hazards Combustible.

Other hazards No particular hazards known.

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
30 - 50	Methyl methacrylate
	CAS: 80-62-6, EINECS/ELINCS: 201-297-1, EU-INDEX: 607-035-00-6, ECB-Nr.: 01-2119452498-28-0000
	GHS/CLP: Flam. Liq. 2: H225 - Skin Irrit. 2: H315 - Skin Sens. 1: H317 - STOT SE 3: H335
	EEC: F-Xi, R 11-37/38-43
10 - 30	2-Phenoxyethyl methacrylate
	CAS: 10595-06-9, EINECS/ELINCS: 234-201-1
	EEC: Xi, R 36/38
1 - <10	Tetrahydrofurfuryl-2-methacrylate
	CAS: 2455-24-5, EINECS/ELINCS: 219-529-5
	GHS/CLP: Eye Irrit. 2: H319 - STOT SE 3: H335 - Skin Irrit. 2: H315
	EEC: Xi, R 36/37/38
1 - <10	2-Hydroxyethyl methacrylate
	CAS: 868-77-9, EINECS/ELINCS: 212-782-2, EU-INDEX: 607-124-00-X
	GHS/CLP: Eye Irrit. 2: H319 - Skin Sens. 1: H317
	EEC: Xi, R 36/38-43
1 - <3	Methacrylic acid
	CAS: 79-41-4, EINECS/ELINCS: 201-204-4, EU-INDEX: 607-088-00-5, ECB-Nr.: 01-2119463884-26-xxxx
	GHS/CLP: Acute Tox. 4: H302 - Acute Tox. 4: H332 - Acute Tox. 3: H311 - Skin Corr. 1A: H314
	EEC: C, R 21/22-35
0,1 - <1	2,6-di-tert-butyl-p-cresol
	CAS: 128-37-0, EINECS/ELINCS: 204-881-4, ECB-Nr.: 01-2119555270-46-XXXX
	GHS/CLP: Aquatic Chronic 1: H410, M = 1
	EEC: N, R 50/53
0,1 - <1	Cumene hydroperoxide
	CAS: 80-15-9, EINECS/ELINCS: 201-254-7, EU-INDEX: 617-002-00-8
	GHS/CLP: Org. Perox. E: H242 - Acute Tox. 3: H331 - Acute Tox. 4: H302 H312 - STOT RE 2: H373 - Skin Corr. 1B: H314 - Aquatic Chronic 2: H411, M = 1
	EEC: O-T-N, R 7-21/22-23-48/20/22-34-51/53

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%.
For full text of H-statements and R-phrases: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Remove contaminated soaked clothing immediately and dispose of safely.

Inhalation Ensure supply of fresh air.
In the event of symptoms seek for medical treatment.

Skin contact In case of contact with skin wash off immediately with soap and water.
Consult a doctor if skin irritation persists.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Ingestion Consult a doctor immediately.
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects
See SECTION 11.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to the doctor.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide.
Water spray jet.
Dry powder.
Foam.

Extinguishing media that must not be used

Full water jet.

5.2 Special hazards arising from the substance or mixture

Unknown risk of formation of toxic pyrolysis products.

5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.
Cool containers at risk with water spray jet.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep away from all sources of ignition.
Ensure adequate ventilation.
High risk of slipping due to leakage/spillage of product.
Use personal protective clothing.

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up mechanically.
Take up residues with absorbent material (e.g. sand).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only in well-ventilated areas.
Vacuuming in situ required.

Vapours can form an explosive mixture with air.
Keep away from all sources of ignition - Refrain from smoking.
Ignitable mixtures can be formed in the empty container.

Contaminated work clothing should not be allowed out of the workplace.
Do not eat, drink or smoke when using this product.
After worktime and before work breaks the affected skin areas must be thoroughly cleaned.
Use barrier skin cream.
Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Do not store together with oxidizing agents.

Keep container tightly closed.
Keep container in a well-ventilated place.
Protect from heat/overheating.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Range [%]	Substance
30 - 50	Methyl methacrylate
	CAS: 80-62-6, EINECS/ELINCS: 201-297-1, EU-INDEX: 607-035-00-6, ECB-Nr.: 01-2119452498-28-0000
	Long-term exposure: 50 ppm, 208 mg/m³
	Short-term exposure (15-minute): 100 ppm, 416 mg/m³
1 - <3	Methacrylic acid
	CAS: 79-41-4, EINECS/ELINCS: 201-204-4, EU-INDEX: 607-088-00-5, ECB-Nr.: 01-2119463884-26-xxxx
	Long-term exposure: 20 ppm, 72 mg/m³
	Short-term exposure (15-minute): 40 ppm, 143 mg/m³
0,1 - <1	2,6-di-tert-butyl-p-cresol
	CAS: 128-37-0, EINECS/ELINCS: 204-881-4, ECB-Nr.: 01-2119555270-46-XXXX
	Long-term exposure: 10 mg/m³

Ingredients with occupational exposure limits to be monitored (EU)

Range [%]	Substance / EC LIMIT VALUES
30 - 50	Methyl methacrylate
	CAS: 80-62-6, EINECS/ELINCS: 201-297-1, EU-INDEX: 607-035-00-6, ECB-Nr.: 01-2119452498-28-0000
	Eight hours: 50 ppm
	Short-term (15-minute): 100 ppm

DNEL

Range [%]	Substance
0,1 - <1	2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
	Industrial, inhalative, Long-term - systemic effects: 5,8 mg/m³.
	Industrial, dermal, Long-term - systemic effects: 8,3 mg/kg.
	general population, dermal, Long-term - systemic effects: 5 mg/kg.
	general population, inhalative, Long-term - systemic effects: 1,74 mg/m³.
30 - 50	Methyl methacrylate, CAS: 80-62-6
	Industrial, dermal, Acute - local effects: 1,5 mg/cm².
	Industrial, inhalative, Long-term - local effects: 208 mg/m³.
	Industrial, dermal, Long-term - systemic effects: 13,67 mg/kg bw/d.
	Industrial, dermal, Long-term - local effects: 1,5 mg/cm².
	Industrial, inhalative, Long-term - systemic effects: 208 mg/m³.
	general population, inhalative, Long-term - local effects: 104 mg/m³.
	general population, dermal, Long-term - systemic effects: 8,2 mg/kg bw/d.
	general population, dermal, Long-term - local effects: 1,5 mg/cm².
	general population, dermal, Acute - local effects: 1,5 mg/cm².
	general population, inhalative, Long-term - systemic effects: 74,3 mg/m³.
1 - <3	Methacrylic acid, CAS: 79-41-4
	Industrial, inhalative, Long-term - systemic effects: 29,6 mg/m³.
	Industrial, inhalative, Long-term - local effects: 88 mg/m³.
	Industrial, dermal, Long-term - systemic effects: 4,25 mg/kg bw/d.
	general population, dermal, Long-term - systemic effects: 2,55 mg/kg bw/d.
	general population, inhalative, Long-term - systemic effects: 6,3 mg/m³.
	general population, inhalative, Long-term - local effects: 6,55 mg/m³.

PNEC

Range [%]	Substance
0,1 - <1	2,6-di-tert-butyl-p-cresol, CAS: 128-37-0

	sewage treatment plants (STP), 100 mg/l.
	seawater, 0,0004 mg/l.
	freshwater, 0,004 mg/l.
	oral (food), 16,7 mg/kg.
	sediment (freshwater), 1,29 mg/kg.
	soil, 1,04 mg/kg.
30 - 50	Methyl methacrylate, CAS: 80-62-6
	soil, 1,47 mg/kg dw.
	sediment (freshwater), 5,74 mg/kg dw.
	sewage treatment plants (STP), 10 mg/l.
	seawater, 0,94 mg/l.
	freshwater, 0,94 mg/l.
1 - <3	Methacrylic acid, CAS: 79-41-4
	soil, 1,2 mg/kg dw.
	sewage treatment plants (STP), 10 mg/l.
	seawater, 0,82 mg/l.
	freshwater, 0,82 mg/l.

8.2 Exposure controls

Additional advice on system design
Ensure adequate ventilation on workstation.

Eye protection
Safety glasses.

Hand protection
The details concerned are recommendations. Please contact the glove supplier for further information.
In full contact:
Butyl rubber, >480 min (EN 374).
In splash contact
Butyl rubber, >120 min (EN 374).

Skin protection
Light protective clothing.

Other
Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of these equipments to chemicals should be ascertained with the respective supplier.
Do not inhale vapours.
Avoid contact with eyes and skin.

Respiratory protection
Breathing apparatus in the event of high concentrations.
Short term: filter apparatus, filter AX.

Thermal hazards
No information available.

Delimitation and monitoring of the environmental exposition
not determined

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	viscous liquid
Color	colourless transparent
Odor	characteristic
Odour threshold	not determined
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	100,5
Flash point [°C]	15
Flammability [°C]	not determined
Lower explosion limit	not determined
Upper explosion limit	not determined
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/ml]	0,99
Bulk density [kg/m³]	not applicable
Solubility in water	immiscible
Partition coefficient [n-octanol/water]	not determined
Viscosity	not determined
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	not determined
Autoignition temperature [°C]	421
Decomposition temperature [°C]	not determined

9.2 Other information

Temperature resistance: -40°C - +80°C °C

SECTION 10: Stability and reactivity

10.1 Reactivity

See SECTION 10.3.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents and strong acids.
Evolution of flammable mixtures possible in air when heated above flash point and/or during spraying or misting.
Reactions with strong acids.

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

See SECTION 7

10.6 Hazardous decomposition products

Flammable gases/vapours.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Range [%]	Substance
0,1 - <1	2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
	LD50, dermal, Rat: > 5000 mg/kg bw (OECD 402).
	LD50, oral, Rat: > 5000 mg/kg bw (OECD 401).
	NOEL, oral, Rat: 25 mg/kg/28d.
0,1 - <1	Cumene hydroperoxide, CAS: 80-15-9
	LD50, oral, Rat: 382 mg/kg IUCLID.
	LC50, inhalative, Rat: 220 ppm 4h IUCLID.
30 - 50	Methyl methacrylate, CAS: 80-62-6
	LD50, dermal, Rabbit: > 5000 mg/kg.
	LD50, oral, Rat: > 5000 mg/kg (OECD 401).
	LC50, inhalative, Rat: 29,8 mg/l.
1 - <3	Methacrylic acid, CAS: 79-41-4
	LD50, dermal, Rabbit: 500 - 1000 mg/kg.
	LD50, oral, Rat: 1320 mg/kg bw.
	LC50, inhalativ (vapour), Rat: 7,1 mg/l/h.

Serious eye damage/irritation	not determined
Skin corrosion/irritation	not determined
Respiratory or skin sensitisation	not determined
Specific target organ toxicity — single exposure	not determined
Specific target organ toxicity — repeated exposure	not determined
Mutagenicity	not determined
Reproduction toxicity	not determined
Carcinogenicity	not determined

General remarks

Toxicological data of complete product are not available.
The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists.

SECTION 12: Ecological information

12.1 Toxicity

Range [%]	Substance
0,1 - <1	2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
	LC50, (96h), Danio rerio: > 0,57 mg/l.
	EC50, (48h), Daphnia magna: > 0,17 mg/l.
	IC50, (72h), Desmodesmus subspicatus: > 0,42 mg/l.
	NOEC, (21d), Daphnia magna: > 0,39 mg/l.
0,1 - <1	Cumene hydroperoxide, CAS: 80-15-9
	LC50, (96h), Oncorhynchus mykiss: 3,9 mg/l.
	EC50, (24h), Daphnia magna: 7 mg/l.
30 - 50	Methyl methacrylate, CAS: 80-62-6
	LC50, (96h), Oncorhynchus mykiss: > 79 mg/l (OECD 203).
	EC50, (72h), Selenastrum capricornutum: > 110 mg/l (OECD 201).
	EC50, (48h), Daphnia magna: 69 mg/l (OECD 202).
	NOEC, (21d), Daphnia magna: 37 mg/l (OECD 202-2).
	NOEC, Danio rerio: 9,4 mg/l (OECD 210).

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	not determined

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

Ecological data of complete product are not available.
Do not discharge product unmonitored into the environment or into the drainage.
No classification on the basis of the calculation procedure of the preparation directive.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Dispose of as hazardous waste.
Disposal in an incineration plant in accordance with the regulations of the local authorities.

Waste no. (recommended) 080409*

Contaminated packaging

Uncontaminated packaging may be taken for recycling.
Packaging that cannot be cleaned should be disposed of as for product.

Waste no. (recommended) 150110*

SECTION 14: Transport information

14.1 UN number

See SECTION 14.2 in accordance with UN shipping name

14.2 UN proper shipping name

Transport by land according to ADR/RID	UN 1133 ADHESIVES 3 II
- Classification Code	F1
- Label	
- ADR LQ	5 l
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 2 (D/E)
Inland navigation (ADN)	UN 1133 ADHESIVES 3 II
- Classification Code	F1
- Label	
Marine transport in accordance with IMDG	UN 1133 Adhesives 3 II
- EMS	F-E, S-D
- Label	
- IMDG LQ	5 l
Air transport in accordance with IATA	UN 1133 Adhesives 3 II
- Label	

14.3 Transport hazard class(es)

See SECTION 14.2 in accordance with UN shipping name

14.4 Packing group

See SECTION 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See SECTION 14.2 in accordance with UN shipping name

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

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

No information available.

SECTION 15: Regulatory information

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

EEC-REGULATIONS	1967/548 (1999/45); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (Reach); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2013); IMDG-Code (2013, 36. Amdt.); IATA-DGR (2013).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- Observe employment restrictions for people	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
- VOC (1999/13/CE)	1,43%

15.2 Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

16.1 R-phrases (SECTION 3)

R 11: Highly flammable.
R 37/38: Irritating to respiratory system and skin.
R 43: May cause sensitisation by skin contact.
R 36/38: Irritating to eyes and skin.
R 36/37/38: Irritating to eyes, respiratory system and skin.
R 21/22: Harmful in contact with skin and if swallowed.
R 35: Causes severe burns.
R 50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 7: May cause fire.
R 23: Toxic by inhalation.
R 48/20/22: Harmful - danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R 34: Causes burns.
R 51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

16.2 Hazard statements (SECTION 3)

H411 Toxic to aquatic life with long lasting effects.
H373 May cause damage to organs through prolonged or repeated exposure.
H302+H312 Harmful if swallowed or in contact with skin.
H331 Toxic if inhaled.
H242 Heating may cause a fire.
H410 Very toxic to aquatic life with long lasting effects.
H314 Causes severe skin burns and eye damage.
H311 Toxic in contact with skin.
H332 Harmful if inhaled.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H317 May cause an allergic skin reaction.
H315 Causes skin irritation.
H225 Highly flammable liquid and vapour.

16.3 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform ChemicaL Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.4 Other information

Customs Tariff	not determined
Classification procedure	Flam. Liq. 2: H225 Highly flammable liquid and vapour. (On basis of test data) Skin Irrit. 2: H315 Causes skin irritation. (Calculation method) Eye Irrit. 2: H319 Causes serious eye irritation. (Calculation method) Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method) STOT SE 3: H335 May cause respiratory irritation. (Calculation method) Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects. (Calculation method)
Modified position	SECTION 2 been added: H315 Causes skin irritation. SECTION 2 been added: Flam. Liq. 2 SECTION 2 been added: Skin Irrit. 2 SECTION 2 been added: H412 Harmful to aquatic life with long lasting effects. SECTION 2 been added: Eye Irrit. 2 SECTION 2 been added: H319 Causes serious eye irritation. SECTION 2 been added: Skin Sens. 1 SECTION 2 been added: H317 May cause an allergic skin reaction. SECTION 2 been added: Aquatic Chronic 3 SECTION 2 been added: STOT SE 3 SECTION 2 been added: H335 May cause respiratory irritation. SECTION 2 been added: Aquatic Chronic 3 SECTION 2 been added: H225 Highly flammable liquid and vapour. SECTION 4 been added: If eye irritation persists: Get medical advice/attention. SECTION 4 been added: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. SECTION 7 been added: Take off contaminated clothing and wash before reuse. SECTION 7 been added: Contaminated work clothing should not be allowed out of the workplace. SECTION 7 been added: Do not eat, drink or smoke when using this product. SECTION 9 been added: colourless SECTION 9 been added: transparent SECTION 11 been added: The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. SECTION 16 been added: Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.

Copyright: Chemiebüro®

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

1.1 Product identifier

MD-Clearbond Part B
Article number MMB.C.S50

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

1.2.1 Relevant uses

Adhesive

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

Marston Domsel GmbH
Bergheimer Str. 15
53909 Zülpich / GERMANY
Phone 0 22 52 / 94 15 - 0
Fax 0 22 52 / 17 44
Homepage www.marston-domsel.de
E-mail info@marston-domsel.de

Address enquiries to

Technical information info@marston-domsel.de

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency phone

Advisory body +49 (0)89-19240 (24h) (english)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Flam. Liq. 2: H225 Highly flammable liquid and vapour.
Skin Irrit. 2: H315 Causes skin irritation.
Eye Irrit. 2: H319 Causes serious eye irritation.
STOT SE 3: H335 May cause respiratory irritation.
Skin Sens. 1: H317 May cause an allergic skin reaction.
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects.

2.1.2 Classification according to Regulation 67/548/EEC or 1999/45/EC

F, Highly flammable - R 11: Highly flammable.
Xi, Irritant - R 36/37/38: Irritating to eyes, respiratory system and skin.
Sensitizing. - R 43: May cause sensitisation by skin contact.
R 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2 Label elements

The product is classified and required to be labelled in accordance with EC-Directives

Labelling according to Regulation (EC) 1272/2008

Hazard pictograms

Signal word DANGER

Contains: Benzyl methacrylate
exo-1,7,7-Trimethylbicyclo[2.2.1]hept-2-yl methacrylate
Methyl methacrylate

Hazard statements
H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/eye protection/face protection.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.

2.3 Other hazards

none

Physico-chemical hazards Combustible.

Other hazards Further hazards were not determined with the current level of knowledge.

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
50 - 70	Benzyl methacrylate
	CAS: 2495-37-6, EINECS/ELINCS: 219-674-4, EU-INDEX: 607-134-00-4
	GHS/CLP: Eye Irrit. 2: H319 - Skin Irrit. 2: H315 - STOT SE 3: H335
	EEC: Xi, R 36/37/38
10 - 30	exo-1,7,7-Trimethylbicyclo[2.2.1]hept-2-yl methacrylate
	CAS: 7534-94-3, EINECS/ELINCS: 231-403-1, EU-INDEX: 607-134-00-4
	GHS/CLP: Eye Irrit. 2: H319 - Skin Irrit. 2: H315 - STOT SE 3: H335
	EEC: Xi, R 36/37/38
1 -< 10	Methyl methacrylate
	CAS: 80-62-6, EINECS/ELINCS: 201-297-1, EU-INDEX: 607-035-00-6, ECB-Nr.: 01-2119452498-28-0000
	GHS/CLP: Flam. Liq. 2: H225 - Skin Irrit. 2: H315 - Skin Sens. 1: H317 - STOT SE 3: H335
	EEC: F-Xi, R 11-37/38-43
1 - <2,5	2,6-di-tert-butyl-p-cresol
	CAS: 128-37-0, EINECS/ELINCS: 204-881-4, ECB-Nr.: 01-2119555270-46-XXXX
	GHS/CLP: Aquatic Chronic 1: H410, M = 1
	EEC: N, R 50/53
0,1 - <1	Trimethylenediamine
	CAS: 109-76-2, EINECS/ELINCS: 203-702-7
	GHS/CLP: Flam. Liq. 3: H226 - Acute Tox. 2: H310 - Acute Tox. 4: H302 - Skin Corr. 1A: H314
	EEC: T-C, R 10-24-35-22-52/53

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%.
For full text of H-statements and R-phrases: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
Change soaked clothing.

Inhalation
Ensure supply of fresh air.
In the event of symptoms seek for medical treatment.

Skin contact
In case of contact with skin wash off immediately with soap and water.
Consult a doctor if skin irritation persists.

Eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Ingestion
Consult a doctor immediately.
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
Forward this sheet to the doctor.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Carbon dioxide.
Water spray jet.
Dry powder.
Foam.

Extinguishing media that must not be used
Full water jet.

5.2 Special hazards arising from the substance or mixture

Unknown risk of formation of toxic pyrolysis products.

5.3 Advice for firefighters

Use self-contained breathing apparatus.
Do not inhale explosion and/or combustion gases.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep away from all sources of ignition.
High risk of slipping due to leakage/spillage of product.
Use personal protective equipment (protective gloves).
Ensure adequate ventilation.

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only in well-ventilated areas.
No special measures necessary if used correctly.

Keep away from sources of ignition - refrain from smoking.

Contaminated work clothing should not be allowed out of the workplace.
Do not eat, drink or smoke when using this product.
Wash hands before breaks and after work.
Use barrier skin cream.
Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Do not store together with oxidizing agents.

Keep container tightly closed.
Keep container in a well-ventilated place.
Keep in a cool place. Store in a dry place.
Protect from heat/overheating.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Range [%]	Substance
1 -< 10	Methyl methacrylate
	CAS: 80-62-6, EINECS/ELINCS: 201-297-1, EU-INDEX: 607-035-00-6, ECB-Nr.: 01-2119452498-28-0000
	Long-term exposure: 50 ppm, 208 mg/m³
	Short-term exposure (15-minute): 100 ppm, 416 mg/m³
1 - <2,5	2,6-di-tert-butyl-p-cresol
	CAS: 128-37-0, EINECS/ELINCS: 204-881-4, ECB-Nr.: 01-2119555270-46-XXXX
	Long-term exposure: 10 mg/m³

Ingredients with occupational exposure limits to be monitored (EU)

Range [%]	Substance / EC LIMIT VALUES
1 -< 10	Methyl methacrylate
	CAS: 80-62-6, EINECS/ELINCS: 201-297-1, EU-INDEX: 607-035-00-6, ECB-Nr.: 01-2119452498-28-0000
	Eight hours: 50 ppm
	Short-term (15-minute): 100 ppm

DNEL

Range [%]	Substance
1 - <2,5	2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
	Industrial, dermal, Long-term - systemic effects: 8,3 mg/kg.
	Industrial, inhalative, Long-term - systemic effects: 5,8 mg/m³.
	general population, inhalative, Long-term - systemic effects: 1,74 mg/m³.
	general population, dermal, Long-term - systemic effects: 5 mg/kg.
1 -< 10	Methyl methacrylate, CAS: 80-62-6
	Industrial, dermal, Acute - local effects: 1,5 mg/cm².
	Industrial, dermal, Long-term - local effects: 1,5 mg/cm².
	Industrial, dermal, Long-term - systemic effects: 13,67 mg/kg bw/d.
	Industrial, inhalative, Long-term - local effects: 208 mg/m³.
	Industrial, inhalative, Long-term - systemic effects: 208 mg/m³.
	general population, dermal, Acute - local effects: 1,5 mg/cm².
	general population, dermal, Long-term - local effects: 1,5 mg/cm².
	general population, dermal, Long-term - systemic effects: 8,2 mg/kg bw/d.
	general population, inhalative, Long-term - local effects: 104 mg/m³.
	general population, inhalative, Long-term - systemic effects: 74,3 mg/m³.

PNEC

Range [%]	Substance
1 - <2,5	2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
	sewage treatment plants (STP), 100 mg/l.
	seawater, 0,0004 mg/l.
	freshwater, 0,004 mg/l.
	oral (food), 16,7 mg/kg.
	sediment (freshwater), 1,29 mg/kg.
	soil, 1,04 mg/kg.
1 -< 10	Methyl methacrylate, CAS: 80-62-6
	soil, 1,47 mg/kg dw.
	sediment (freshwater), 5,74 mg/kg dw.
	sewage treatment plants (STP), 10 mg/l.
	seawater, 0,94 mg/l.

freshwater, 0,94 mg/l.

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	Safety glasses.
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. In full contact: Nitrile rubber, >480 min (EN 374). In splash contact Nitrile rubber, >480 min (EN 374).
Skin protection	light protective clothing
Other	Avoid contact with eyes and skin. Do not inhale vapours. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of these equipments to chemicals should be ascertained with the respective supplier.
Respiratory protection	Breathing apparatus in the event of high concentrations.
Thermal hazards	No information available.
Delimitation and monitoring of the environmental exposition	See SECTION 6+7.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	colourless transparent
Odor	characteristic
Odour threshold	not determined
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	not determined
Flash point [°C]	< 21
Flammability [°C]	not determined
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidizing properties	no
Vapour pressure/gas pressure [kPa]	not determined
Density [g/ml]	0,98
Bulk density [kg/m³]	not applicable
Solubility in water	virtually insoluble
Partition coefficient [n-octanol/water]	not determined
Viscosity	not applicable
Relative vapour density determined in air	not determined
Evaporation speed	not determined
Melting point [°C]	not determined
Autoignition temperature [°C]	not determined
Decomposition temperature [°C]	not determined

9.2 Other information

Temperature resistance: -40°C - +80°C °C

SECTION 10: Stability and reactivity

10.1 Reactivity

See SECTION 10.3.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with strong oxidizing agents and strong acids.
Reactions with reducing agents.

10.4 Conditions to avoid

See SECTION 7.2.
Strong heating.

10.5 Incompatible materials

See SECTION 7

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Range [%]	Substance
1 - <2,5	2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
	LD50, dermal, Rat: > 5000 mg/kg bw (OECD 402).
	LD50, oral, Rat: > 5000 mg/kg bw (OECD 401).
	NOEL, oral, Rat: 25 mg/kg/28d.
50 - 70	Benzyl methacrylate, CAS: 2495-37-6
	LD50, oral, Rat: 5000 mg/kg (Lit.).
0,1 - <1	Trimethylenediamine, CAS: 109-76-2
	LD50, dermal, Rabbit: 177 mg/kg (Lit.).
	LD50, oral, Rat: 700 mg/kg (Lit.).
1 -< 10	Methyl methacrylate, CAS: 80-62-6
	LD50, dermal, Rabbit: > 5000 mg/kg.
	LD50, oral, Rat: > 5000 mg/kg (OECD 401).
	LC50, inhalative, Rat: 29,8 mg/l.

Serious eye damage/irritation	not determined
Skin corrosion/irritation	not determined
Respiratory or skin sensitisation	not determined
Specific target organ toxicity — single exposure	not determined
Specific target organ toxicity — repeated exposure	not determined
Mutagenicity	not determined
Reproduction toxicity	not determined
Carcinogenicity	not determined
General remarks	

Toxicological data of complete product are not available.
The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists.

SECTION 12: Ecological information

12.1 Toxicity

Range [%]	Substance
1 - <2,5	2,6-di-tert-butyl-p-cresol, CAS: 128-37-0
	LC50, (96h), Danio rerio: > 0,57 mg/l.
	EC50, (48h), Daphnia magna: > 0,17 mg/l.
	IC50, (72h), Desmodesmus subspicatus: > 0,42 mg/l.
	NOEC, (21d), Daphnia magna: > 0,39 mg/l.
50 - 70	Benzyl methacrylate, CAS: 2495-37-6
	LC50, (96h), Pimephales promelas: 4,7 mg/l (Lit.).
0,1 - <1	Trimethylenediamine, CAS: 109-76-2
	LC50, (96h), Pimephales promelas: 1190 mg/l (Lit.).
	EC50, (48h), Daphnia magna: 27 mg/l (Lit.).
1 -< 10	Methyl methacrylate, CAS: 80-62-6
	LC50, (96h), Oncorhynchus mykiss: > 79 mg/l (OECD 203).
	EC50, (72h), Selenastrum capricornutum: > 110 mg/l (OECD 201).
	EC50, (48h), Daphnia magna: 69 mg/l (OECD 202).
	NOEC, (21d), Daphnia magna: 37 mg/l (OECD 202-2).
	NOEC, Danio rerio: 9,4 mg/l (OECD 210).

12.2 Persistence and degradability

Behaviour in environment compartments	not determined
Behaviour in sewage plant	not determined
Biological degradability	not determined

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

Ecological data of complete product are not available.
Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Dispose of as hazardous waste.
Disposal in an incineration plant in accordance with the regulations of the local authorities.

Waste no. (recommended) 080409*

Contaminated packaging

Packaging that cannot be cleaned should be disposed of as for product.
Uncontaminated packaging may be taken for recycling.

Waste no. (recommended) 150110*

SECTION 14: Transport information

14.1 UN number

See SECTION 14.2 in accordance with UN shipping name

14.2 UN proper shipping name

Transport by land according to ADR/RID UN 1133 ADHESIVES (ENVIRONMENTALLY HAZARDOUS) 3 II

- Classification Code F1

- Label

- ADR LQ 5 l

- ADR 1.1.3.6 (8.6) Transport category (tunnel restriction code) 2 (D/E)

Inland navigation (ADN) UN 1133 ADHESIVES (ENVIRONMENTALLY HAZARDOUS) 3 II

- Classification Code F1

- Label

Marine transport in accordance with IMDG UN 1133 Adhesives 3 II

- EMS F-E, S-D

- Label

- IMDG LQ 5 l

Air transport in accordance with IATA UN 1133 Adhesives 3 II

- Label

14.3 Transport hazard class(es)

See SECTION 14.2 in accordance with UN shipping name

14.4 Packing group

See SECTION 14.2 in accordance with UN shipping name

14.5 Environmental hazards

See SECTION 14.2 in accordance with UN shipping name

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

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

No information available.

SECTION 15: Regulatory information

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

EEC-REGULATIONS	1967/548 (1999/45); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (Reach); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2013); IMDG-Code (2013, 36. Amdt.); IATA-DGR (2013).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- Observe employment restrictions for people	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
- VOC (1999/13/CE)	not determined

15.2 Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

16.1 R-phrases (SECTION 3)

R 36/37/38: Irritating to eyes, respiratory system and skin.
R 11: Highly flammable.
R 37/38: Irritating to respiratory system and skin.
R 43: May cause sensitisation by skin contact.
R 50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 10: Flammable.
R 24: Toxic in contact with skin.
R 35: Causes severe burns.
R 22: Harmful if swallowed.
R 52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

16.2 Hazard statements (SECTION 3)

H314 Causes severe skin burns and eye damage.
H302 Harmful if swallowed.
H310 Fatal in contact with skin.
H226 Flammable liquid and vapour.
H410 Very toxic to aquatic life with long lasting effects.
H317 May cause an allergic skin reaction.
H225 Highly flammable liquid and vapour.
H335 May cause respiratory irritation.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

16.3 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform ChemicaL Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.4 Other information

Customs Tariff not determined

Classification procedure

Flam. Liq. 2: H225 Highly flammable liquid and vapour. (On basis of test data)
Skin Irrit. 2: H315 Causes skin irritation. (Calculation method)
Eye Irrit. 2: H319 Causes serious eye irritation. (Calculation method)
STOT SE 3: H335 May cause respiratory irritation. (Calculation method)
Skin Sens. 1: H317 May cause an allergic skin reaction. (Calculation method)
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects. (Calculation method)

Modified position

SECTION 2 been added: Skin Sens. 1

SECTION 2 been added: Skin Irrit. 2

SECTION 2 been added: H315 Causes skin irritation.

SECTION 2 been added: Eye Irrit. 2

SECTION 2 been added: H319 Causes serious eye irritation.

SECTION 2 been added: H335 May cause respiratory irritation.

SECTION 2 been added: H317 May cause an allergic skin reaction.

SECTION 2 been added: Aquatic Chronic 3

SECTION 2 been added: H412 Harmful to aquatic life with long lasting effects.

SECTION 2 been added: S 16: Keep away from sources of ignition - No smoking.

SECTION 2 been added: STOT SE 3

SECTION 2 been added: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

SECTION 2 been added: H225 Highly flammable liquid and vapour.

SECTION 2 been added: Flamme

SECTION 2 been added: Flam. Liq. 2

SECTION 2 been added: R 11: Highly flammable.

SECTION 2 been added: Highly flammable

SECTION 4 been added: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

SECTION 4 been added: If eye irritation persists: Get medical advice/attention.

SECTION 4 been added: Forward this sheet to the doctor.

SECTION 7 been added: Contaminated work clothing should not be allowed out of the workplace.

SECTION 7 been added: Take off contaminated clothing and wash before reuse.

SECTION 7 been added: Do not eat, drink or smoke when using this product.

SECTION 10 been added: Reactions with strong oxidizing agents and strong acids.

SECTION 11 been added: The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists.

SECTION 14 been added: ADHESIVES

SECTION 14 been added: Adhesives

SECTION 14 been added: Adhesives

SECTION 15 been added: TRGS 510: Lagerung von Gefahrstoffen in ortsbeweglichen Behältern

Copyright: Chemiebüro®