

SAFETY DATA SHEET (EC 1907/2006)**Biodent C+B, Liquid N****DequDent**

A Dentsply International Company

Material no.		Version	3.2 / GB
Specification	141760	Revision date	24.09.2010
VA-Nr		Print Date	24.09.2010
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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**Product information**

Trade name	Biodent C+B, Liquid N
Company	DequDent GmbH Postfach 1364 D-63403 Hanau
Telephone	+49 (0)6181/59-5767
Telefax	+49 (0)6181/59-5879
Email address	SDB@degudent.de
Emergency telephone number	+49 (0)180 / 23 24-555

Use of the Substance / Preparation For dental use only.

REACH Registration No.: if available listed in Chapter. 3

2. HAZARDS IDENTIFICATION**Other Hazards**

Highly flammable.

Irritating to respiratory system and skin.

May cause sensitisation by skin contact.

When heated, formation of explosive vapour/air mixtures.

Danger of bursting of closed systems to vigorous exothermic polymerization. Avoid uncontrolled polymerization.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Information on ingredients / Hazardous components as per Directive 67/548/EC or Directive 1999/45/EC**

• methyl methacrylate		> 60%	
CAS-No.	80-62-6	EC-No.	201-297-1
	F; R11 Xi; R37/38 R43		
• Tetramethylene dimethacrylate		< 30%	
CAS-No.	2082-81-7	EC-No.	218-218-1
	Xi; R36/37/38		
• tetrahydrofurfuryl methacrylate		< 15%	
CAS-No.	2455-24-5	EC-No.	219-529-5
	Xi R36/37/38		

See chapter 16 for text of risk phrases

4. FIRST AID MEASURES**Description of first aid measures**

Take off all contaminated clothing immediately.

Inhalation

Move victims into fresh air.

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Consult a physician immediately.

Skin contact

Wash off immediately with soap and plenty of water.
Consult a physician immediately.

Eye contact

With eye held open, thoroughly rinse immediately with plenty of water for at least 5 minutes.
Consult an ophthalmologist.

Ingestion

Do not induce vomiting.
Have the mouth rinsed with water.
Have patient drink plenty of water in small sips.
Consult a physician immediately.

Indication of any immediate medical attention and special treatment needed

Specific therapy/antidote treatment: none known
If required, therapy of irritative effect.
If substance has been swallowed:
Allergic reactions of the skin are possible.
Treatment of allergic reaction if necessary.
Early endoscopy in order to assess mucosa lesions in the oesophagus and stomach which may appear. If necessary, aspirate leftover substance.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

mist, carbon dioxide (CO₂), quenching foam - polar

Unsuitable extinguishing media

high volume water jet

Special hazards arising from the substance or mixture

In case of combustion or decomposition of the product, the fumes produced lead to irritations or inflammations of the respiratory tract.
When heated, formation of explosive vapour/air mixtures.

Special protective equipment for fire-fighters

In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit.

Advice for firefighters

In case of fire cool containers or take them to a safe place.
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Keep unauthorized persons away.
Wear personal protective equipment.
Avoid coming into contact with the following substance/substance classes: Product.

Environmental precautions

Prevent substance from entering soil, natural bodies of water and sewer systems.
Avoid penetration into drainage system or in rooms situated at a lower level because of danger of explosion.

Methods and material for containment and cleaning up

Remove all sources of ignition.

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Absorb with liquid-binding material (e.g. inert absorbent sand universal binder).
Pick up mechanically with a suitable device and collect in a suitable container.

Additional advice

Ensure explosion proofness.
Dispose of contaminated material as a waste in a correct manner.

7. HANDLING AND STORAGE

Handling

Precautions for safe handling

Always close container tightly after removal of product.
Avoid light effect heat sun rays.
Vapours are heavier than air.
Only fill up to 90 % of the container as air is required to stabilize.

Advice on protection against fire and explosion

Product is flammable.
product is highly flammable.
Keep away from sources of ignition - No smoking.
Explosion-proof installations required.
Take precautionary measures against static discharges.

Storage

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.
Ensure there is good room ventilation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

• methyl methacrylate			
CAS-No.	80-62-6	EC-No.	201-297-1
Control parameters	50 ppm 208 mg/m ³		Time Weighted Average (TWA):(EH40 WEL)
Control parameters	100 ppm 416 mg/m ³		Short Term Exposure Limit (STEL):(EH40 WEL)

Engineering measures

Ensure suitable suction/aeration at the work place and with operational machinery.

Personal protective equipment

Respiratory protection

If workplace exposure limit is exceeded apply Respirator with brown A-type filter.

Hand protection

Wear protective gloves made of the following materials: solvent-resistant material.

Glove material butyl-rubber

Material thickness 0.5 mm

Break through time 60 min

Method Source: GESTIS substance database (hazardous substance information system of commercial professional associations)

The suitability for a specific workplace should be discussed with the producers of the protective gloves.
The exact break through time can be obtained from the protective glove producer and this has to be observed.

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preventive skin protection
Use barrier cream regularly.

Eye protection

goggles

Skin and body protection

Immediately change moistened and saturated work clothes.
Use suitable skin protective agents before handling product. Cleanse and apply cream to skin after work.
Preventive skin protection recommended.

Hygiene measures

No eating, drinking, smoking, or snuffing tobacco at work. Wash face and/or hands before break and end of work.

If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used.

Avoid contact with skin and eyes.

After contact with skin, wash immediately with plenty of water.

If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form	liquid
Colour	colourless
Odour	ester-like

Information on basic physical and chemical properties

Melting point/range	-48.2 °C	
	related to substance:	methyl methacrylate
Boiling point/range	100.3 °C (1013 hPa)	
	Method: DIN 51 751	
	related to substance:	methyl methacrylate
Flash point	10 °C	
	Method: DIN 51 755	
	related to substance:	methyl methacrylate
Ignition temperature	430 °C	
	Method: DIN 51 794	
	related to substance:	methyl methacrylate
Lower explosion limit	2.1 %(V)	
	related to substance:	methyl methacrylate
Upper explosion limit	12.5 %(V)	
	related to substance:	methyl methacrylate
Vapour pressure	38.7 hPa (20 °C)	
	related to substance:	methyl methacrylate
Density	0.94 g/cm ³ (20 °C)	
	Method: DIN 51757	
	related to substance:	methyl methacrylate
Water solubility	15.9 g/l (20 °C)	
	related to substance:	methyl methacrylate
Partition coefficient (n-octanol/water)	POW: 1.38	

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	(measured) (literature value) related to substance:	methyl methacrylate
Viscosity, dynamic	0.63 mPa.s (20 °C) Method: Brookfield method related to substance:	methyl methacrylate

10. STABILITY AND REACTIVITY

Conditions to avoid	Avoid light effect / sun rays. Protect from heat sources of ignition.
Incompatible materials	Product polymerizes on contact with radical generating substances such as peroxides, azo compounds, heavy metal compounds, solutions.
Possibility of hazardous reactions	Danger of bursting of closed systems to vigorous exothermic polymerization. Avoid uncontrolled polymerization.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	LD50 Rat: > 5000 mg/kg Method: OECD Test Guideline 401 literature related to substance: methyl methacrylate
Acute inhalation toxicity	LC50 Rat: 29.8 mg/l / 4 h (literature value) related to substance: methyl methacrylate
Acute dermal toxicity	LD50 Rabbit: > 5000 mg/kg literature related to substance: methyl methacrylate
Skin irritation	Rabbit / 24 h not irritating Method: Draize Test related to substance: methyl methacrylate
Eye irritation	Rabbit not irritating Method: Draize Test related to substance: methyl methacrylate
Sensitization	guinea pig: positive and negative literature related to substance: methyl methacrylate
Repeated dose toxicity	inhalative Rat Testing period: 2 years NOAEL: 25 mg/kg target organ/effect: irritative effects, skin linings literature related to substance: methyl methacrylate
	Oral Rat

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	Testing period: 2 years NOAEL: 2000 mg/kg drinking water analysis no therapy-related results literature related to substance: methyl methacrylate
Gentotoxicity in vitro	positive and negative literature related to substance: methyl methacrylate
Gentotoxicity in vivo	no evidence of mutagenic effects literature related to substance: methyl methacrylate
Mutagenicity assessment	in vivo: no evidence of mutagenic effects
Carcinogenicity	inhalative Rat related to substance: methyl methacrylate Oral Rat related to substance: methyl methacrylate inhalative mouse related to substance: methyl methacrylate Oral mouse related to substance: methyl methacrylate inhalative dog related to substance: methyl methacrylate Oral dog related to substance: methyl methacrylate
carcinogenicity assessment	no evidence that cancer may be caused, literature. related to substance: methyl methacrylate
teratogenicity assessment	no evidence of teratogenic properties related to substance: methyl methacrylate

12. ECOLOGICAL INFORMATION**Elimination information (persistence and degradability)**

Biodegradability	Exposure time: 14 day Result: 94 % Readily biodegradable. Method: OECD 301 C related to substance: methyl methacrylate
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Ecotoxicity effects

Toxicity to fish	LC50 Lepomis macrochirus: 191 mg/l / 96 h literature related to substance: methyl methacrylate Oncorhynchus mykiss: > 79 mg/l / 96 h
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Method: OECD 203
literature
related to substance: methyl methacrylate

Toxicity to daphnia
EC50 Daphnia magna: 68 mg/l / 48 h
Method: OECD 202
(literature value)
related to substance: methyl methacrylate

EC50 Daphnia magna: 49 mg/l / 21 d
Method: OECD 202 part 2
(literature value)
related to substance: methyl methacrylate

Toxicity to algae
EC50 selenastrum capricornutum: 170 mg/l / 96 h
Method: OECD 201
literature
related to substance: methyl methacrylate

Toxicity to bacteria
EC0 Pseudomonas putida: 100 mg/l
literature
related to substance: methyl methacrylate

Further information on ecology

Further Information Prevent penetration into soil, stretches of water and drainage systems.

13. DISPOSAL CONSIDERATIONS**Product**

Disposal according to local authority regulations.

Uncleaned packaging

Disposal according to local authority regulations.

14. TRANSPORT INFORMATION**Land transport ADR/RID/GGVSEB (Germany)**

Class	3
ADR/RID-Labels	3
UN-No	1247
Packaging group	II
orange warning plate	339 / 1247
Tunnel Restriction Code (ADR)	(D/E)

Description of the goods (Technical name)

METHYL METHACRYLATE MONOMER, STABILIZED

Sea transport IMDG-Code/GGVSee (Germany)

Class	3
UN-No	1247
Packaging group	II
EmS	F-E, S-D

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Proper technical name (Proper shipping name)
METHYL METHACRYLATE MONOMER, STABILIZED

Air transport ICAO-TI/IATA-DGR

Class	3
UN-No	1247
Packaging group	II

Proper technical name (Proper shipping name)
Methyl methacrylate monomer, stabilized

Inland waterway transport ADN/ADNR/GGVSEB (Germany)

Class	3
ADR/RID-Labels	3
UN-No / Substance number	1247
Packaging group	II

Description of the goods (Technical name)
METHYL METHACRYLATE MONOMER, STABILIZED

Loading instructions/Remarks

IATA_C	ERG-Code 3L
IATA_P	ERG-Code 3L
IMDG	Clear of living quarters.
ADR	Measures as 2.2.3.2.2 ADR/RID/ADNR have been applied.
ADR	Observe listed materials regulation §35, paragraph 1 GGVSEB
ADNR	Measures as 2.2.3.2.2 ADR/RID/ADNR have been applied.

15. REGULATORY INFORMATION**Labelling according to EC Directives****hazard-defining component(s)**

- methyl methacrylate

Symbol(s)	F Xi	Highly flammable Irritant
R-phrase(s)	R11 R37/38 R43	Highly flammable. Irritating to respiratory system and skin. May cause sensitisation by skin contact.
S-phrase(s)	S 2 S24 S37 S46	Keep out of the reach of children. Avoid contact with skin. Wear suitable gloves. If swallowed, seek medical advice immediately and show this container or label.

National legislation

employment restriction The employment limitations under the protection of young persons act, the laws on pregnant women and young mothers and work at home is/are to be observed.

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DeguDent*A Dentsply International Company***16. OTHER INFORMATION****Risk phrase (R phrase) texts****• methyl methacrylate**

R11	Highly flammable.
R37/38	Irritating to respiratory system and skin.
R43	May cause sensitisation by skin contact.

• Tetramethylene dimethacrylate

R36/37/38	Irritating to eyes, respiratory system and skin.
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• tetrahydrofurfuryl methacrylate

R36/37/38	Irritating to eyes, respiratory system and skin.
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Further information

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.