Safety Data Sheet

according to Regulation (EC) No 1907/2006

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

1.1. Product identifier

microPattern® Plus

Product group: Liquid

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

Use of the substance/mixture

Dental aid.

1.3. Details of the supplier of the safety data sheet

Company name: micropolymer S.r.l.s.
Via Torrette Battifoglia Zona Industrile
Street: Fraz.S.Andrea Delle Fratte
Place: 06132 Perugia (Italy)
Telephone: +39 3274572561
e-mail: info@micropolymerdental.com
Contact person: Ing.Libero Leone
e-mail: info@micropolymerdental.com
Internet: www.micropolymerdental.com

1.4. Emergency telephone number:

+39 0266101029

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Flammable liquid: Flam. Liq. 2
Acute toxicity: Acute Tox. 4
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Respiratory or skin sensitisation: Skin Sens. 1
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Highly flammable liquid and vapour.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

Methyl methacrylate
1,4-Butandiol dimethacrylate
2,2'-[(4-methylphenyl)imino]bisethanol

Signal word: Danger

Pictograms:

Hazard statements

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of Water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse .
P370+P378	In case of fire: Use carbon dioxide (CO2), foam or dry powder to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container to to as hazardous waste - in accordance with local and national legislation - suitable, approved incinerator for combustible organ. waste.

2.3. Other hazards

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

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixture based on mehtyl methacylat with chemical catalyst.

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
80-62-6	Methyl methacrylate			60-<65%
	201-297-1		01-2119452498-28	
	Flam. Liq. 1, Skin Irrit. 2, Skin Sens. 1, STOT SE 3; H224 H315 H317 H335			
72869-86-4	7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate			10-<15%
	Aquatic Chronic 3; H412			
2082-81-7	1,4-Butandiol dimethacrylate			5-<10%
	218-218-1		01-2119967415-30	
	Skin Sens. 1; H317			
3077-12-1	2,2'-[(4-methylphenyl)imino]bisethanol			1-<5%
	221-359-1			
	Acute Tox. 4, Eye Dam. 1; H302 H318			

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove contaminated, saturated clothing immediately. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention.

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.

After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time , then consult an ophthalmologist immediately.

After ingestion

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink plenty of water.

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

Headache Drowsiness Causes skin and eye irritation. Skin sensitisation

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water spray jet0 Carbon dioxide (CO2)0 Foam0 Extinguishing powder.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Flammable. Vapours can form explosive mixtures with air. Can polymerize when heated. Airtightly sealed containers can explode explosively when heated.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Danger of explosion

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges . Vapours can form explosive mixtures with air.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints on joint storage

Do not store together with: Oxidising agent. Pyrophoric or self-heating substances.

7.3. Specific end use(s)

Dental aid.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
80-62-6	Methyl methacrylate	50	208		TWA (8 h)	WEL
		100	416		STEL (15 min)	WEL

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
80-62-6	Methyl methacrylate			
Worker DNEL, long-term		inhalation		208 mg/m³
Worker DNEL, long-term		dermal		17 mg/kg bw/day

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary . When using do not eat or drink.

Eye/face protection

Suitable eye protection: goggles.

Hand protection

Wear suitable protective gloves.
To protect against splashes: butyl; EN 374.
To protect against immersion: butyl; 0.7 mm or thicker, EN 374.
For information on the safe use of methacrylate monomers with suitable protective gloves, see Best Practice

Guide

The suitability of gloves should be coordinated with the manufacturer. In the event of contamination or if the Breakthrough time is exceeded, change gloves. Resistance of the glove material: see Glove manufacturer information.

Skin protection

Flame-retardant protective clothing. Wear anti-static footwear and clothing

Respiratory protection

Wear suitable respiratory protection if technical measures are inadequate or not available and an exposure is to be expected that exceeds the DNEL (derived exposure level below which the substance does not impair human health). A suitable breathing mask with type A filter (EN141 or EN405) is recommended. A self-contained breathing apparatus may be necessary to generate particularly high vapor concentrations.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	colourless
Odour:	characteristic

		Test method
pH-Value:	not determined	
Changes in the physical state		
Melting point:	-48 °C	
Initial boiling point and boiling range:	100,3 °C	
Flash point:	10 °C	DIN 51755
Flammability		
Solid:	not applicable	
Gas:	not applicable	
Lower explosion limits:	2,1 vol. %	
Upper explosion limits:	12,5 vol. %	
Ignition temperature:	435 °C	DIN 51794
Auto-ignition temperature		
Solid:	not applicable	
Gas:	not applicable	
Decomposition temperature:	not determined	
Oxidizing properties		
Not oxidising.		
Vapour pressure:	37 hPa	
Density (at 20 °C):	0,94 g/cm³	
Water solubility: (at 20 °C)	15,3 g/L	
Solubility in other solvents		
not determined		
Partition coefficient:	log Pow 1,38	
Viscosity / dynamic: (at 20 °C)	0,53 mPa·s	
Vapour density:	not determined	
Evaporation rate:	not determined	

9.2. Other information

Solid content: not determined

none

SECTION 10: Stability and reactivity

10.1. Reactivity

oxidising0 Oxidising. Flammable0 Ignition hazard.

10.2. Chemical stability

May cause decomposition by long-term light influence.

10.3. Possibility of hazardous reactions

Exothermic reaction with: Combustible substance0 Alkali metals0 Alkaline earth metal0 Heavy metals0 Metal powder0 Acid0 Base. 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

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

10.5. Incompatible materials

Keep away from combustible material. Reducing agent Amines Heavy metals Peroxides Oxidising agent Polymerization catalysts such as peroxy or azo compounds, strong acids, alkalis and oxidizing agents.

10.6. Hazardous decomposition products

Formation of: Oxygen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

The product has not been tested.

Acute toxicity

Harmful if inhaled.

ATEmix tested

	Dose	Species	Source
LD50, oral	> 5000 mg/kg	Rat	
LD50, dermal	> 5000 mg/kg	Rabbit	
LC50, inhalation (vapour) (1 h)	29,8 mg/l	Rat	

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
80-62-6	Methyl methacrylate				
	oral	LD50 >5000 mg/kg	Rat	OECD 401	
	dermal	LD50 >5000 mg/kg	Rabbit		
	inhalation vapour	LC50 29,8 mg/l	Rat		
2082-81-7	1,4-Butandiol dimethacrylate				
	oral	LD50 > 10000 mg/kg	Rat		
	dermal	LD50 > 3000 mg/kg	Rabbit		
3077-12-1	2,2'-[(4-methylphenyl)imino]bisethanol				
	oral	LD50 > 300 mg/kg	Rat		

Irritation and corrosivity

Causes skin irritation.
Causes serious eye irritation.

Sensitising effects

May cause an allergic skin reaction. (Methyl methacrylate; 1,4-Butandiol dimethacrylate)

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation. (Methyl methacrylate)

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Additional information on tests

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

SECTION 12: Ecological information

12.1. Toxicity

Acute (short-term) fish toxicity

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
80-62-6	Methyl methacrylate						
	Acute fish toxicity	LC50 mg/l	> 79	96 h	Oncorhynchus mykiss (Rainbow trout)	OECD 203	
	Acute algae toxicity	ErC50 mg/l	> 110	72 h	Selenastrum capricornutum	OECD 201	
	Acute crustacea toxicity	EC50	69 mg/l	48 h	Daphnia magna (Big water flea)	OECD 202	
	Crustacea toxicity	NOEC	37 mg/l	21 d	Daphnia magna (Big water flea)	OECD 202	
2082-81-7	1,4-Butandiol dimethacrylate						
	Acute fish toxicity	LC50 mg/l	32,5	96 h	Oncorhynchus mykiss (Rainbow trout)		
	Acute crustacea toxicity	EC50 mg/l	7,51	48 h	Daphnia magna (Big water flea)	OECD 211	
	Crustacea toxicity	NOEC mg/l	7,51		Selenastrum capricornutum		

12.2. Persistence and degradability

Biodegradable.

12.3. Bioaccumulative potential

On the basis of existing data about the elimination/degradation and bioaccumulation potential longer term damage to the environment is unlikely.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
80-62-6	Methyl methacrylate	1,38
2082-81-7	1,4-Butandiol dimethacrylate	3,1

12.4. Mobility in soil

Mobility in soil: No adsoption in soil or sediment.

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6. Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

List of Wastes Code - residues/unused products

070208 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of plastics, synthetic rubber and man-made fibres; other still bottoms and reaction residues; hazardous waste

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	UN 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
Excepted quantity:	E2
Transport category:	2
Hazard No:	339
Tunnel restriction code:	D/E

Other applicable information (land transport)

SAPT: > 60 °C

Inland waterways transport (ADN)

14.1. UN number:	UN 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
Excepted quantity:	E2

Other applicable information (inland waterways transport)

SAPT: > 60 °C

Marine transport (IMDG)

14.1. UN number:	UN 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
Special Provisions:	-
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-E, S-D

Other applicable information (marine transport)

SAPT: > 60 °C

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	UN 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
Limited quantity Passenger:	1 L
Passenger LQ:	Y341
Excepted quantity:	E2

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)

SAPT: > 60 °C

14.6. Special precautions for user

Warning: Combustible liquid.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information

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

2010/75/EU (VOC):	64,5 % (606,3 g/l)
2004/42/EC (VOC):	64,5 % (606,3 g/l)
Information according to 2012/18/EU (SEVESO III):	P5c FLAMMABLE LIQUIDS

Additional information

To follow: 850/2004/EC, 79/117/EEC, 689/2008/EC

National regulatory information

Employment restrictions:	Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water hazard class (D):	3 - strongly hazardous to water
Skin resorption/Sensitization:	Causes allergic hypersensitivity reactions.

15.2. Chemical safety assessment

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

SECTION 16: Other information

Abbreviations and acronyms

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%

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Flam. Liq. 2; H225	On basis of test data
Acute Tox. 4; H332	On basis of test data
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
Skin Sens. 1; H317	Calculation method
STOT SE 3; H335	Calculation method

Relevant H and EUH statements (number and full text)

H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects .

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.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)