

1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING**1.1 Product identifier**

Product name	Vertex Trayplast Monomer
Product description	Monomer based on Methyl Methacrylate
Alternative names	Vertex Trayplast

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

Identified use	Professional: End use of mixtures containing for manufacturing of dental prosthesis, expanding or repairing dental prosthesis, manufacturing of dental regulators and individually formed impression trays.
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Uses advised against	Mixtures containing unreacted liquid monomer intended to come into contact with skin or nails.
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Refer to Exposure Scenario Annex for further details.

1.3 Details of the supplier of the safety data sheet

Vertex-Dental B.V.
P.O. Box 10
3700 AA Zeist
The Netherlands
info@vertex-dental.com

Emergency telephone number: +31 30 6976749
(only available during office hours)

2. SECTION 2: HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture**

According to Regulation (EG) Nr. 1272/2008 [CLP].

Flammable Liquid Category 2	H225
Skin corrosion / irritation Category 2	H315
Skin sensitization Category 1	H317
Eye irritation Category 2A	H319
STOT-single exposure Category 3	H335

For full text of H phrases see section 16

2.2 Label elements

Signal word
Hazard statement(s)

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

Precautionary statement(s)

P210 Keep away from heat, sparks, open flame, hot surfaces – No smoking
P261 Avoid breathing vapours.
P280 Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

P501 Dispose of contents/container to hazardous waste in accordance with local, state or national legislation. Incinerate under approved controlled conditions, using incinerators suitable for the disposal of flammable organics.

2.3 Other hazards

Not classified as PBT or vPvB.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

This product is a mixture.

3.2 Mixtures

Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below.

According to Regulation (EG) Nr. 1272/2008 [CLP].

Hazardous ingredient(s)	%W/W	EC-No.	Hazard Class and Category Code(s)	Hazard statement Code (s)
Methyl Methacrylate	> 80	201-297-1	Flam. Liq. 2 Skin Irrit. 2 Skin Sens. 1 STOT SE 3	H225 H315 H317 H335
Ethyl Methacrylate	< 20	202-597-5	Flam. Liq. 2 Skin Irrit. 2 Skin Sens. 1 Eye Irrit. 2 STOT SE 3	H225 H315 H317 H319 H335
N,N-Dimethyl-p-toluidine	< 1	202-805-4	Acute Tox., oral 3 Acute Tox., dermal 3 Acute Tox., inhal. 3 STOT RE 2 Aquatic Chronic 3	H301 H311 H331 H373 H412

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor if you feel unwell.
Skin Contact	IF ON SKIN (or hair): Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash before reuse.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.
Ingestion	Do not induce vomiting. Rinse mouth. Get immediate medical attention.

- 4.2 Most important symptoms and effects, both acute and delayed**
Causes skin irritation. May cause respiratory irritation. May cause an allergic skin reaction.
- 4.3 Indication of the immediate medical attention and special treatment needed**
None necessary.

SECTION 5: FIRE-FIGHTING MEASURES

- 5.1 Extinguishing media**

Suitable Extinguishing Media	In case of fire, use water spray, foam, dry powder or CO2 for extinction. Keep containers cool by spraying with water if exposed to fire.
Unsuitable Extinguishing Media	Do not use water jet.
- 5.2 Special hazards arising from the substance or mixture**
Highly flammable liquid and vapour. May polymerise on heating. Sealed containers may rupture explosively if hot.
- 5.3 Advice for fire-fighters**
A self-contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**
Eliminate sources of ignition. Wear protective gloves and eye/face protection. Avoid breathing vapours. See section: 8.
- 6.2 Environmental precautions**
Avoid release to the environment. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body
- 6.3 Methods and material for containment and cleaning up**
Collect spillage. Do not adsorb onto sawdust or other combustible materials. Transfer to a lidded container for disposal or recovery. Use only non-sparking tools.
- 6.4 Reference to other sections**
See section: 8. 13

SECTION 7: HANDLING AND STORAGE

- 7.1 Precautions for safe handling**
Do not eat, drink or smoke at the work place. Wash thoroughly after handling. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. The vapour is heavier than air; beware of pits and confined spaces. Ground container and receiving equipment. Use explosion proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Keep away from heat, sparks, open flame, hot surfaces – No smoking. Protect from sunlight.

IMPORTANT: Methacrylates stored in bulk must be kept in contact with air (oxygen). Monomer vapours are uninhibited and may form polymers in vent or flame arresters, resulting in blockage of vents.

Storage temperature preferably not exceeding 25°C

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters**

Substance	EC No.	LTEL ppm (8 Hr TWA)	LTEL mg/m ³ (8 Hr TWA)	STEL ppm	STEL mg/m ³	Notes
Methyl Methacrylate	201-297-1	50	208	100	416	WEL, IOELV

DNEL	Oral	Inhalation	Dermal
Worker – Long Term – Local effects	¹	210 mg/m ³	1,5 mg/cm ²
Worker – Long Term – Systemic effects	¹	210 mg/m ³	13,67 mg/kg body weight/day
Worker – Short Term – Local effects	¹	²	1,5 mg/cm ²
Worker – Short Term – Systemic effects	¹	²	³
Consumer – Long Term – Local effects	¹	105 mg/m ³	1,5 mg/m ²
Consumer – Long Term – Systemic effects	¹	74,3 mg/m ³	8,2 mg/kg body weight/day
Consumer – Short Term – Local effects	¹	²	1,5 mg/cm ²
Consumer – Short Term – Systemic effects	¹	²	³

	PNEC
Aquatic Compartment	0,94 mg/l (Fresh water) 0,094 mg/l (Sea water) 5,74 mg/kg dry weight (sediment)
Terrestrial Compartment	1,47 mg/kg dry weight

¹ Oral toxicity: DNEL not established

² Long term DNEL is protective of effects resulting from short term exposure

³ Dermal toxicity: DNEL not established

Substance	EC No.
N,N-Dimethyl-p-toluidine	202-805-4

DNEL	Oral	Inhalation	Dermal
Worker – Long Term – Systemic effects	¹	1,35 mg/m ³	1,19 mg/cm ²
Consumer – Long Term – Systemic effects	2,37 mg/m ³	0,34 mg/m ³	0,29 mg/kg

	PNEC
Aquatic Compartment	0,153 mg/l (Fresh water) 0,0153 mg/l (Sea water) 45,38 mg/kg dry weight (sediment)
Terrestrial Compartment	18,68 mg/kg dry weight

8.2 Exposure controlsAppropriate engineering controls

Do not eat, drink or smoke at the work place. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection	Wear eye/face protection. Safety spectacles/goggles/full face shield.
Skin protection	Wear suitable gloves. The most appropriate glove depends on consideration of a number of factors including the physical strength of the glove, the degree of manual dexterity required, the amount of permeation through the glove material and the duration of wear. There are a wide variety of elastomeric and laminate gloves available. Common elastomeric glove material include latex (natural rubber), neoprene (poly isoprene), nitrile rubber (ABS rubber), butyl rubber, polyvinyl alcohol (PVA), polyvinyl chloride (PVC) and fluoroelastomers. Laminate gloves are made from heat sealed sheets of PVA between layers of polyethylene. In permeations tests PVA/Polyethylene laminate and supported PVA gloves performed best (note that PVA can be rendered ineffective by contact with water if the laminate layer is breached). Butyl and nitrile rubber gloves offer short-term protection. Latex surgical gloves offer little protection. Gloves should be stored correctly and changed regularly, especially if excessive exposure has occurred.
Respiratory protection	Wear suitable respiratory protective equipment if engineering controls are insufficient, or not present, and exposure to levels above the DNEL is likely. A suitable mask with filter type A (EN141 or EN405) may be appropriate.
Other	Keep working clothes separately. Take off contaminated clothing immediately. Keep away from food, drinks and animal feed.

Environmental exposure controls

Ensure effective control measures when working within the boundaries as specified in section 6.2 of each GES.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Form	Liquid
Colour	Clear/colourless
Odour	Ester like, characteristic strong and acrid
pH	Not applicable
Melting point	-48 °C
Boiling point	100,5 °C
Flash point	10 °C
Flammable Limits (lower)	2,1 % v/v
Flammable Limits (Upper)	12,5 % v/v
Vapour pressure	3.600 Pa at 20 °C
Solubility (Water)	Slightly soluble. 1,6 % at 20 °C

Solubility (Other)	Miscible with most organic solvents
Auto ignition temperature	421 °C
Explosive properties	Not applicable
Oxidising properties	Not applicable
Relative density	0,94 (Water = 1) at 15,5 °C

9.2 Other information

Minimum Ignition Energy (mJ)	0,89 – 0,97 at 23 °C
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SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

Will exothermically polymerise in the presence of initiators.

10.2 Chemical stability

Stable in the presence of inhibitor.

10.3 Possibility of hazardous reactions

Susceptible to polymerisation initiated by prolonged storage or the presence of catalyst.

10.4 Conditions to avoid

Heat and direct sunlight.

10.5 Incompatible materials

Polymerisation catalysts, such as peroxy or azo compounds, strong acids, alkalis and oxidising agents. Oxides and salts of transition metals. Organic Nitrogen containing compounds.

10.6 Hazardous Decomposition Product(s)

Does not decompose up to auto-ignition temperature.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

(Based on MMA)

Acute toxicity

Ingestion	Low oral toxicity, but ingestion may cause irritation of the gastrointestinal tract.
Ingestion toxicity data	LD50 (Oral) > 5000 mg/kg N,N-Dimethyl-p-toluidine (100%) LD50 (oral) = 1767 mg/kg
Ingestion STOT-single exposure	Not applicable.
Inhalation	May cause respiratory irritation. May cause drowsiness or dizziness.
Inhalation toxicity data	LC50 (vapour) 7093 pp, (29,8 mg/l)(4hr) N,N-Dimethyl-p-toluidine (100%) LC50 (vapour) = 1,4 mg/l
Inhalation STOT-single exposure	Exposure to high concentrations may produce adverse effects on the nasal epithelium.
Skin Contact	May cause an allergic skin reaction. Causes skin irritation.
Skin contact toxicity data	Repeated and/or prolonged contact may cause dermatitis. LD50 (dermal) > 5000 mg/kg N,N-Dimethyl-p-toluidine (100%): toxic in contact with skin
Skin contact STOT-single exposure	Not applicable.

Eye Contact	High vapour concentration will cause irritation.
Eye contact toxicity data	Slight irritant to rabbit eyes. (OECD 405)
Eye STOT-single exposure	Not applicable.
Aspiration hazard data	Not an aspiration hazard.
<u>Sensitization</u>	
Skin sensitization data	Skin sensitization has been reported in studies with guinea pigs. (OECD 406) Evidence of contact sensitization in man.
Respiratory sensitization data	Not a respiratory sensitizer. Irritant to the respiratory system and high concentrations may aggravate pre-existing conditions.
<u>CMR effects</u> (carcinogenicity, mutagenicity and toxicity for reproduction).	
Carcinogenicity data	No evidence of carcinogenicity. (OECD 451)
Germ cell mutagenicity data	Salmonella typhimurium (TA1535, 153, 97, 98, 100) negative (OECD 71). Teratogenic and fetotoxic effects only observed in presence of maternal toxicity. NOAEC (Mouse) = 9.000 ppm NOAEC (Rat) > 2.028 ppm
<u>Repeated exposure toxicity</u>	
Chronic exposure	Repeated exposure to high levels produces adverse effects on the heart, lungs, liver and kidneys. Repeated exposure of animals by inhalation to levels at or above the occupational exposure level produces adverse effects on the nasal epithelium (levels of 100 and 40ppm). There is no reason to believe that Methyl Methacrylate represents a carcinogenic or mutagenic hazard to man based upon evidence from well conducted animal studies, relevant mutagenicity studies and adequate epidemiology studies in relevant cohorts. Recent studies in animals have shown that high exposures do not produce embryo or foetotoxic nor teratogenic effects in the presence of maternal toxicity.
STOT – repeated exposure data	NOEL (oral)(rat)(104 weeks) > 2000 pm NOAEC (inhalation)(rat)(104 weeks) 100 ppm (OECD 453) NOAEC (inhalation)(mouse)(14 weeks) 1000 ppm (OECD 412)

SECTION 12: ECOLOGICAL INFORMATION**12.1 Toxicity**

Low toxicity to fish.
MMA (100%) LC50 (fish)(typically) > 100 mg/l
MMA (100%) LC50 (fathead minnow)(96 hour)(static) 130 mg/l
DMPT (100%) LC50 (fish)(96 hour) 46 – 52 mg/l
Harmful to aquatic invertebrates.
MMA (100%) EC50 (Daphnia magna)(48 hour) 69 mg/l
Low toxicity to algae
MMA (100%) EC50 (Selenastrum capricornutum)(96 hour) 170 mg/l
MMA (100%) NOEC (zebra fish)(35 days)(flow through) 8,4 mg/l
The product is substantially removed in biological treatment processes.

12.2 Persistence and degradability

Readily biodegradable:
Chemical Oxygen Demand (COD): 88% (28 days)
Inherent Biodegradation:
Dissolved Organic Carbon Removal (DOC removal): > 95% (28 days)

12.3 Bioaccumulative potential
The product has low potential for bioaccumulation.

12.4 Mobility in soil
The products is predicted to have high mobility in soil

12.5 Results of PBT and vPvB assessment
Not classified as PBT or vPvB.

12.6 Other adverse effects
Not subject to international restrictions.

SECTION 13: DISPOSAL CONSIDERATIONS

Avoid release to the environment. Decontaminate empty drums before recycling.

13.1 Waste treatment methods
Dispose of contents/container to hazardous waste in accordance with local, state or national legislation. Incinerate under approved controlled conditions, using incinerators suitable for the disposal of flammable organics.

SECTION 14: TANSPORT INFORMATION

14.1 UN-Number
UN 1247

14.2 UN Proper Shipping Name
METHYL METHACRYLATE MONOMER, STABILIZED

14.3 Transport hazard class(es)

Class	3
IMDG-Class	3
IMDG EMS	F-E, S-D
IATA	3
ADR-Classification Code	F1
ADR HIN	339
ADR-Transport Category	2
Tunnel Restriction Code	D/E
RID	3
AND	3
UK CDG Road: Emergency Action Code	3YE

14.4 Packing group
II

14.5 Environmental hazards
Not classified as a Marine Pollutant.

14.6 Special precautions for user
No special requirements.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

SECTION 15: REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulation (EC) No 1272/2008 (Classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 107/2006.
 Directive 2009/161/EU (third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 200/39/EC).

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for Methyl Methacrylate.

SECTION 16: OTHER INFORMATION

This Safety Data Sheet was prepared in accordance with EC Regulation (EC) No. 453/2010.

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of publication. The information given is designed only as guidance or 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.

The values mentioned in section 8 of this datasheet are based on the invalid values in The Netherlands. Other countries may apply other values.

LEGEND

Note: Not all of the following are necessarily contained in this Safety Data Sheet:folgenden Angaben:

IOELV:	Indicative Occupational Exposure Limit Value.
WEL:	Workplace Exposure Limit.
Bmgv:	Biological Monitoring Guidance Value.
Sen:	Capable of causing respiratory sensitization.
Sk:	Can be absorbed through skin.
Carc:	Capable of causing cancer and/or heritable genetic damage.
CHAN:	Chemical Hazard Alert Notice.
COM:	The company aims to control exposure in its workplace to this limit.
LTEL:	Long Term Exposure Limit.
STEL:	Short Term Exposure Limit.
TWA:	Time Weighted Average.
STOT SE:	Specific Target Organ Toxicity – Single Exposure.
Repr.:	Reproductive toxicity.
Aquatic acute/chronic:	Hazardous to the aquatic environment .

Full text of H/P/R phrases

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
P210	Keep away from heat, sparks, open flame, hot surfaces – No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/.../ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing vapours.
P264	Wash (hands and exposed skin) thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.

- P272 Contaminated work clothing should not be allowed out of the workplace.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- P303 + P361 + P353 IF ON SKIN (of hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312 Call a POISON CENTRE or doctor if victim feels unwell.
- P321 Specific treatment (see on this label).
- P332 + P313 If skin irritation occurs: Get medical advice/attention.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.
- P363 Wash contaminated clothing before reuse.
- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P403 + P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.
- P501 Dispose of contents/container to hazardous waste in accordance with local, state or national legislation. Incinerate under approved controlled conditions, using incinerators suitable for the disposal of flammable organics.

This is the end of SDS ID: M-TN-2015-04-UK