
SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name/designation** Photopolymer Ortho Tough Series (includes Ortho Tough M, Ortho Tough 3SP)**1.2 Relevant identified uses of the substance or mixture and uses advised against****Relevant identified uses****Sector of uses [SU]**

Light curing resin for EnvisionTec's family Computer Aided Modeling Devices

1.3 Details of the supplier of the safety data sheet**Supplier (manufacturer/importer/only representative/downstream user/distributor)**

Envisiontec GmbH

Brusseler Str., 51

Germany-D 45968 Gladbeck

P.O. Box:

Telephone: +49204398750

E-mail: info@envisiontec.com

Information telephone: +49204398750

Emergency telephone number: +49204398750

www.envisiontec.com

1.4 Emergency telephone number**Emergency telephone number**

This number is serviced during office hours.

SECTION 2: Hazards identification**Hazards description****Hazard designation:**

This article doesn't contain dangerous substances or preparations intended to be released under normal or reasonably foreseeable conditions of use.

2.1 Classification of the substance or mixture**Classification according to Regulation (EC) No. 1272/2008 [CLP]****Health hazards****health hazards**

Acute Tox. 4

hazard statements for health hazards

H332 Harmful if inhaled.

health hazards

Skin Irrit. 2

hazard statements for health hazards

H315 Causes skin irritation.

health hazards

Eye Irrit. 2

hazard statements for health hazards

H319 Causes serious eye irritation.

health hazards

Skin Sens. 1

hazard statements for health hazards

H317 May cause an allergic skin reaction.

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms



GHS07

Signal word

Warning

Hazard Statements

Hazard statements for health hazards:

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

Precautionary Statements

General:

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

Prevention:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Disposal:

P501.1 Dispose of contents/container to industrial incineration plant.

Product identifiers

hexane-1,6-diol diacrylate

Isobornyl acrylate

Special rules on packaging

Tactile warning according to EN/ISO 11683.

Additional information

No information available for acute dermal and inhalative toxicity

2.3 Other hazards

Other hazards

People who suffer from skins problems, asthma, allergies, chronic or recurring respiratory illnesses must not be deployed in processes, which use this substance. Process vapours can irritate airways, skin and eyes.

SECTION 3: Composition / information on ingredients

remark

Full text of R-phrases: see section 16.

3.1/3.2 Mixture related information

Hazardous ingredients

hexane-1,6-diol diacrylate	5 - 15 %
CAS 13048-33-4	
EC 235-921-9	
INDEX 607-109-00-8	
Skin Irrit. 2, H315 / Eye Irrit. 2, H319 / Skin Sens. 1, H317	
Isobornyl acrylate	1 - 3 %
CAS 5888-33-5	
EC 227-561-6	
Acute Tox. 4, H332 / Skin Irrit. 2, H315 / Eye Irrit. 2, H319 / STOT SE 3, H335	
Titanium Dioxide	0.1 - 0.2 %
Acute Tox. 4, H332 / Skin Irrit. 2, H315 / Eye Irrit. 2, H319 / STOT SE 3, H335	
Acrylated monomer	5 - 20 %
Skin Irrit. 2, H315 / Eye Irrit. 2, H319	
Acrylated monomer	10 - 15 %
Skin Irrit. 2, H315 / Eye Irrit. 2, H319	
Methacrylated oligomer	10 - 40 %
Skin Irrit. 2, H315 / Eye Irrit. 2, H319	
Acrylated oligomer	20 - 30 %
Skin Irrit. 2, H315 / Eye Irrit. 2, H319	

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Change contaminated, saturated clothing.

Following inhalation

In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still.
If breathing is irregular or stopped, administer artificial respiration.

Following skin contact

Wash immediately with:

Water and soap

After eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

If swallowed, immediately drink:

Water. Induce vomiting when the affected person is not unconscious.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms

No symptoms known up to now.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

Additional information

The product itself is not combustible. In case of fire and/or explosion do not breathe fumes.

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂)

Dry extinguishing powder.

Foam

Water spray

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Special protective equipment for firefighters

In case of fire: Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

Additional information

Do not use a brush or compressed air for cleaning surfaces or clothing. Clear spills immediately. Eliminate leaks immediately.

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Personal precautions

Wear personal protection equipment. Remove all sources of ignition.

For emergency responders

Personal protection equipment

Use appropriate respiratory protection.

6.2 Environmental precautions

Do not empty into drains or the aquatic environment.

6.3 Methods and material for containment and cleaning up

For containment

Suitable material for taking up

Absorbing material, organic

Sand

6.4 Reference to other sections

No data available

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on general occupational hygiene

When using do not eat, drink, smoke, sniff. Avoid contact with skin, eyes and clothes. Remove contaminated, saturated clothing. Wash contaminated clothing prior to re-use. Wash hands before breaks and after work. Provide eye shower and label its location conspicuously

Protective measures

Advices on safe handling

Avoid:

Skin contact

Eye contact

Always close containers tightly after the removal of product.

Measures to prevent fire

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

Environmental precautions

See chapter 8.

7.2 Conditions for safe storage, including any incompatibilities

Hints on joint storage

Materials to avoid

Materials to avoid

Oxidising agent

Strong alkali

Alcohols

Reducing agent

Storage class

No storage class

Further information on storage conditions

Keep only in the original container in a cool, well-ventilated place.

Recommended storage temperature:

Protect containers against damage.

7.3 Specific end use(s)

No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

No data available

8.2 Exposure controls

Appropriate engineering controls

Instructual measures to prevent exposure

Do not use above following temperatures:

Personal protection equipment

Eye/face protection

Suitable eye protection

Eye glasses with side protection
goggles

Skin protection

Skin protection

Suitable gloves type

Disposable gloves

Suitable material

NBR (Nitrile rubber)

Body protection

Suitable protective clothing

Lab apron. Lab coat.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.

Environmental exposure controls

Instructional measures to prevent exposure

Do not use above following temperatures:

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state

liquid

Colour

opaque

red

light red

Odour

Acrylate

		parameter	Method - source - remark
pH	6.8 - 7.2	at °C: 25 °C	
Melting point/freezing point			No data available
Initial boiling point and boiling range	>100 °C		
Flash point (°C)	>100 °C		
Evaporation rate			No data available
Flammable solids			No data available
Flammable aerosols			No data available

parameter	Method - source - remark
Upper explosion limit (Vol-%)	No data available
Lower explosion limit (Vol-%)	No data available
Vapour pressure	No data available
Density 1.05 - 1.12 g/cm ³ at °C: 25 °C	
Vapour density	No data available
Fat solubility (g/L)	No data available
Water solubility (g/L)	No data available
Soluble (g/L) in	Soluble in: Isopropanol Alcohol
Soluble (g/L) in	Insoluble in:
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Explosives	No data available
Oxidising gases	No data available
Oxidising liquids	No data available
Oxidising solids	No data available
Dynamic viscosity 1000 - 2000 mPa*s at °C: 25 °C	
flow time	No data available
Kinematic viscosity	No data available

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

In case of light influence:

Danger of polymerisation

10.5 Incompatible materials

Materials to avoid

Reacts with :

Oxidizing agents. Reducing agents. Peroxides.

Radical former

10.6 Hazardous decomposition products

Thermal decomposition can lead to the escape of irritating gases and vapours.

Carbon dioxide

Carbon monoxide.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute dermal toxicity

ingredient Titanium Dioxide

Acute toxicity, dermal >10000 mg/kg

Effective dose

LD50:

Species:

Rat.

ingredient Isobornyl acrylate

Acute toxicity, dermal >5000 mg/kg

Effective dose

LD50:

Species:

Rabbit.

Acute oral toxicity

ingredient Titanium Dioxide

Acute toxicity, oral >10000 mg/kg

Effective dose

LD50:

Species:

Rat.

ingredient hexane-1,6-diol diacrylate

Acute toxicity, oral >5000 mg/kg

Effective dose

LD50:

Species:

Rat.

ingredient Isobornyl acrylate

Acute toxicity, oral >4890 mg/kg

Effective dose

LD50:

Species:

Rat.

Eye damage/irritation

Assessment/classification

Irritant. Irritating to eyes. Risk of serious damage to eyes.

Species:

Rabbit.

Respiratory or skin sensitisation

Skin sensitisation

Assessment/classification

May cause sensitization by inhalation and skin contact.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

Acute (short-term) fish toxicity

ingredient Titanium Dioxide

Acute (short-term) fish toxicity >1000 mg/l

Effective dose

LC50:

Test duration =96 h

Acute (short-term) toxicity to crustacea

ingredient Titanium Dioxide

Acute (short-term) toxicity to crustacea >1000 mg/l

Effective dose

EC50

Test duration =48 h

species

Daphnia magna (Big water flea)

ingredient Titanium Dioxide

Acute (short-term) toxicity to crustacea >1000 mg/l

Effective dose

EC0

Test duration =48 h

species

Daphnia magna (Big water flea)

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

Assessment/classification

not readily biodegradable (according to OECD criteria)

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product

Appropriate disposal/Product:

Waste disposal according to official state regulations.

Appropriate disposal / Package

Contaminated packaging:

Handle contaminated packaging in the same way as the substance itself.

Waste code packaging 070208

Waste requires special monitoring: Yes.

Waste name

other still bottoms and reaction residues

Waste code product 070208

Waste requires special monitoring: Yes.

Waste name

other still bottoms and reaction residues

SECTION 14: Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN-No.	not applicable	not applicable	not applicable
14.2 Proper Shipping Name			
14.3 Class(es)			
14.4 Packing group			
14.5 ENVIRONMENTALLY HAZARDOUS			
14.6 Special precautions for user			
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code			

remark - Land transport (ADR/RID)

No dangerous good in sense of this transport regulation.

remark - Air transport (ICAO-TI / IATA-DGR)

Not a hazardous material with respect to these transportation regulations.

SECTION 15: Regulatory information

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

No data available

15.2 Chemical Safety Assessment

Irritant

Harmful

SECTION 16: Other information

Additional information

Further remarks:

Observe labels and safety data sheets for chemicals used in processing. Notice the directions for use on the label.

Relevant R-, H- and EUH-phrases (Number and full text)

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H332 Harmful if inhaled.

Key literature references and sources for data

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.