

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

1.1 Product identifier

Trade name/designation Photopolymer E-Rigid PU (including E-Rigid PU Clear, E-Rigid PU White, E-Rigid PU Black, E-Rigid PU, and PU25)

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

Envisiontec GmbH

Brusseler str., 51

Germany-D45968 Gladbeck

Telephone: 49204398750

Telefax: 492043987599

E-mail: info@envisiontec.com

Information telephone: 49204398750

www.envisiontec.com

1.4 Emergency telephone number

Only available during office hours.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

health hazards

Acute Tox. 4

hazard statements for health hazards

H302 Harmful if swallowed.

health hazards

Skin Irrit. 2

hazard statements for health hazards

H315 Causes skin irritation.

health hazards

Skin Sens. 1

hazard statements for health hazards

H317 May cause an allergic skin reaction.

health hazards

Eye Dam. 1

hazard statements for health hazards

H318 Causes serious eye damage.

health hazards

STOT RE 2

hazard statements for health hazards

H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

health hazards

STOT SE 3

hazard statements for health hazards

H335 May cause respiratory irritation.

Environmental hazards

Aquatic Acute 1

hazard statements for environmental hazards

H400 Very toxic to aquatic life.

Environmental hazards

Aquatic Chronic 2

hazard statements for environmental hazards

H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

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

Hazard components for labelling

Acrylated monomer

Phosphine oxide

Isobornyl acrylate

Hazard pictograms



GHS07



GHS05



GHS08



GHS09

Signal word

Danger

Hazard statements

hazard statements for health hazards

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

Hazard statements for environmental hazards:

H400 Very toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

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.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

- 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.

Storage:

- P404 Store in a closed container.

Disposal:

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

2.3 Other hazards

Other adverse effects

People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

SECTION 3: Composition / information on ingredients

3.1/3.2 Substances/Mixtures

Hazardous ingredients

Phosphine oxide	<2 %
CAS Proprietary	
Skin Sens. 1, H317 / Repr. 2, H361 / Aquatic Chronic 2, H411	
Acrylated oligomer	40 - 80 %
CAS Proprietary	
Skin Irrit. 2, H315 / Skin Sens. 1, H317 / Eye Irrit. 2, H319 / STOT SE 3, H335	
Acrylated monomer	20 - 40 %
CAS Proprietary	
Acute Tox. 4, H302 / Skin Sens. 1B, H317 / Eye Dam. 1, H318 / STOT RE 2, H373	
Isobornyl Acrylate	10 - 20 %
CAS 5888-33-5	
Skin Irrit. 2, H315 / Skin Sens. 1, H317 / Eye Irrit. 2, H319 / STOT SE 3, H335 / Aquatic Acute 1, H400 / Aquatic Chronic 1, H410	

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Remove contaminated, saturated clothing immediately.

Following inhalation

If breathing is irregular or stopped, administer artificial respiration.

Following skin contact

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

After eye contact

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

Do not induce vomiting. If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed

No data available

4.3 Indication of any immediate medical attention and special treatment needed

Special treatment

Treat symptomatically

SECTION 5: Firefighting measures

Additional information

The product itself does not burn. Do not allow run-off from fire-fighting to enter drains or water courses. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Do not inhale explosion and combustion gases.

5.1 Extinguishing media

Suitable extinguishing media

Foam

Extinguishing powder

Carbon dioxide (CO₂)

Unsuitable extinguishing media

Strong water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

In case of fire may be liberated:

Carbon monoxide

Carbon dioxide (CO₂)

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

Clear spills immediately.

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Emergency procedures

Provide adequate ventilation. Remove all sources of ignition.

For emergency responders

Personal protection equipment

Use appropriate respiratory protection.

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

For containment

Suitable material for taking up

Absorbing material, organic

Sand

Chemical binding agents, containing acids

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

Advices on general occupational hygiene

Provide eye shower and label its location conspicuously

Protective measures

Advices on safe handling

Provide room air exhaust at ground level. If handled uncovered, arrangements with local exhaust ventilation should be used if possible. Do not breathe gas/fumes/vapour/spray.

Measures to prevent fire

Keep away from sources of ignition - No smoking. Usual measures for fire prevention. Take precautionary measures against static discharges. When using do not eat, drink, smoke, sniff.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep/Store only in original container. Protect from the action of light. Store at 5 - 30 degree C.

Hints on joint storage

Materials to avoid

Oxidising agent

Reducing agent

Strong alkali

Alcohols

Further information on storage conditions

Keep container tightly closed and in a well-ventilated place. Protect containers against damage.

Protect against:
UV-radiation/sunlight

7.3 Specific end use(s)

Recommendation

Observe instructions for use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

No data available

8.2 Exposure controls

Personal protection equipment

Eye/face protection

Suitable eye protection

Eye glasses with side protection
goggles

Skin protection

Suitable gloves type

Disposable gloves

Suitable material

NBR (Nitrile rubber)
Butyl caoutchouc (butyl rubber)

Unsuitable material

NR (natural rubber, natural latex)

Body protection

Suitable protective clothing

Apron
lab coat

Respiratory protection

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

Respiratory protection necessary at:
insufficient ventilation

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state

liquid

Colour

various
white
black

dark grey
transparent

Odour

Acrylate

	parameter	Method - source - remark
	pH	not determined
	Melting point/freezing point	not determined
	Initial boiling point and boiling range	>100 °C
	Flash point (°C)	150 °C
	Evaporation rate	not determined
	flammability	not determined
	Upper explosion limit	not determined
	lower explosion limit	not determined
	Vapour pressure	not determined
	Vapour density	not determined
	Relative density	1.05 - 1.12 g/cm ³ Temperature 25 °C
	Fat solubility (g/L)	not determined
	Water solubility (g/L)	practically insoluble
	Soluble (g/L) in	Alcohol
	Partition coefficient: n-octanol/water	not determined
	Auto-ignition temperature	not determined
	Decomposition temperature	not determined
	Dynamic viscosity	300 - 600 mPa*s Temperature 30 °C
	flow time	not determined
	Kinematic viscosity	not determined

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazardous reaction when handled and store to provisions.

10.2 Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3 Possibility of hazardous reactions

Danger of polymerisation

with heat evolution in presence of radical forming substances, reducing agents, and/or heavy metals ions.

10.4 Conditions to avoid

In case of light influence:

Danger of polymerisation

Can polymerize with intensive heat release.

10.5 Incompatible materials

Materials to avoid

Oxidising agent, strong

Reducing agent

Radical former

Peroxides

Alkali (lye)

Heavy metals

10.6 Hazardous decomposition products

Carbon monoxide

Carbon dioxide

SECTION 11: Toxicological information

Additional information

Product has not been tested. The statement is derived from properties of the components.

11.1 Information on toxicological effects

Acute toxicity

Acute dermal toxicity

ingredient Acrylated monomer

Acute dermal toxicity >2000 mg/kg

Effective dose

LD50:

Species:

Rat

source

Literature

ingredient Phosphine oxide

Acute dermal toxicity >2000 mg/kg

Effective dose

LD50:

Species:

Rat

Method

OECD 402

ingredient Isobornyl Acrylate

Acute dermal toxicity >2000 mg/kg

Effective dose

LD50:

Species:

Rabbit

Acute inhalation toxicity (vapour)

ingredient Acrylated monomer

Acute inhalation toxicity (vapour) 5.28 mg/kg

Effective dose

LC50:

Exposure time 4 h

Species:

Rat

Acute oral toxicity

ingredient Acrylated monomer

Acute oral toxicity 588 mg/kg

Effective dose

LD50:

Species:

Rat

Method

OECD 401

ingredient Phosphine oxide

Acute oral toxicity >5000 mg/kg

Effective dose

LD50:

Species:

Rat

Method

OECD 401

ingredient Isobornyl Acrylate

Acute oral toxicity >2000 mg/kg

Effective dose

LD50:

Species:

Rat

skin corrosion/irritation

Assessment/classification

Irritant.

Respiratory or skin sensitisation

Sensitisation to the respiratory tract

Assessment/classification

May cause sensitization by inhalation and skin contact.

Skin sensitisation

Assessment/classification

May cause an allergic skin reaction.

STOT-single exposure

STOT SE 3

Irritation to respiratory tract

Assessment/classification

May cause respiratory irritation.

STOT-repeated exposure

STOT RE 1 and 2

Oral specific target organ toxicity (repeated exposure)

Other information

May causes damage to organs through prolonged or repeated exposure if swallowed.

SECTION 12: Ecological information

Additional information

Do not allow uncontrolled discharge of product into environment. Do not allow to enter into surface water or drains. The product has not been tested. The statement is derived from the properties of the components.

12.1 Toxicity

Aquatic toxicity

Acute (short-term) fish toxicity

ingredient Acrylated monomer

Acute (short-term) fish toxicity >200 mg/L

Effective dose

LC50:

Test duration 96 h

species

Brachydanio rerio (zebra-fish)

ingredient Phosphine oxide

Acute (short-term) fish toxicity 1 - 10 mg/L

Effective dose

LC50:

Test duration 96 h

species

Brachydanio rerio (zebra-fish)

ingredient Isobornyl Acrylate

Result / evaluation

Very toxic to fish.

Acute (short-term) toxicity to crustacea

ingredient Acrylated monomer

Acute (short-term) toxicity to crustacea >200 mg/L

Effective dose

EC50

Test duration 48 h

species

Daphnia magna (Big water flea)

Method

OECD 202

ingredient Phosphine oxide

Acute (short-term) toxicity to crustacea 3.53 mg/L

Effective dose

EC50

Test duration 48 h

species

Daphnia magna (Big water flea)

Method

OECD 202

ingredient Isobornyl Acrylate

Result / evaluation

Very toxic to daphnia.

Toxicity to other aquatic plants/organisms

ingredient Acrylated monomer

Acute (short-term) toxicity to aquatic algae and cyanobacteria 120 mg/L

Effective dose

EC50

Test duration 72 h

species

Lemna minor (little duckweed)

ingredient Phosphine oxide

Acute (short-term) toxicity to aquatic algae and cyanobacteria 2.01 mg/L

Effective dose

EC50

Test duration 72 h

ingredient Isobornyl Acrylate

Result / evaluation

Very toxic to algae.

12.2 Persistence and degradability

Assessment/classification

The product has not be tested.

12.3 Bioaccumulative potential

Assessment/classification

The product has not be tested.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

The product has not be tested.

12.6 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product

Dispose of waste according to applicable legislation.

Appropriate disposal / Package

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

Waste code packaging 070208

hazardous waste Yes.

Waste name

other still bottoms and reaction residues

Waste code product 070208

hazardous waste 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	not applicable	not applicable	not applicable
14.3 Class(es)	not applicable	not applicable	not applicable
14.4 Packing group	not applicable	not applicable	not applicable
14.5 ENVIRONMENTALLY HAZARDOUS	not applicable	not applicable	not applicable
14.6 Special precautions for user	not applicable	not applicable	not applicable
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	not applicable	not applicable	not applicable

Additional information - Land transport (ADR/RID)

remark

No dangerous good in sense of this transport regulation.

Additional information - Sea transport (IMDG)

remark

No dangerous good in sense of this transport regulation.

Additional information - Air transport (ICAO-TI / IATA-DGR)

remark

No dangerous good in sense of this transport regulation.

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

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

SECTION 16: Other information

Additional information

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)

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.

H335 May cause respiratory irritation.

H361 Suspected of damaging fertility or the unborn child (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

H373 May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H411 Toxic to aquatic life with long lasting effects.

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.