

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

1.1 Product identifier

Trade name/designation Photopolymer R5 series (included R 05, R5, R5-385, Pro Gray, R5 Gray)

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

Importer/Only Representative

Envisiontec GmbH

Brusseler str., 51

Germany-D 45968 Gladbeck

Telephone: +49204398750

E-mail: info@envisiontec.com

Information telephone: +49204398750

www.envisiontec.com

1.4 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

Acute Tox. 4

hazard statements for health hazards

H302 Harmful if swallowed.

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.

health hazards

STOT SE 3

hazard statements for health hazards

H335 May cause respiratory irritation.

Environmental hazards

Aquatic Chronic 3

hazard statements for environmental hazards

H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements

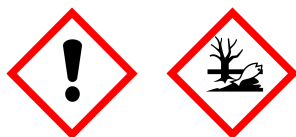
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard components for labelling

Isobornyl acrylate

Phosphine oxide

Hazard pictograms



GHS07

GHS09

Signal word

Warning

Hazard statements

hazard statements for health hazards

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Hazard statements for environmental hazards

H412 Harmful 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.

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

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

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container to industrial incineration plant.

Product identifiers

Isobornyl acrylate

Phosphine oxide

2.3 Other hazards

Other adverse effects

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

Additional information

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

3.1/3.2 Substances/Mixtures

Hazardous ingredients

| | |
|--|-----------|
| Phosphine oxide | 1 - 2 % |
| Skin Sens. 1, H317 / Aquatic Chronic 4, H413 | |
| Isobornyl acrylate | 10 - 25 % |
| CAS 5888-33-5 | |
| EC 227-561-6 | |
| Acute Tox. 4, H302 / Acute Tox. 4, H332 / Skin Irrit. 2, H315 / Eye Irrit. 2, H319 / STOT SE 3, H335 | |
| Acrylated monomer | 5 - 30 % |
| Skin Irrit. 2, H315 / Eye Irrit. 2, H319 | |
| Acrylated oligomer | 20 - 60 % |
| 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.

Following 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 section 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

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)

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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state

liquid

Colour

red

opaque

black

various

dark grey

translucent

Odour

Acrylate

| | parameter | Method - source - remark |
|--|--|--------------------------|
| | Evaporation rate | not determined |
| | Melting point/freezing point | not determined |
| | Boiling point or initial boiling point and boiling range | >100 °C |
| | flammability | not determined |
| | Upper explosion limit | not determined |
| | lower explosion limit | not determined |
| | Flash point (°C) | >100 °C |

| | parameter | Method - source - remark |
|--|-------------------------------|---------------------------------------|
| Auto-ignition temperature | | not determined |
| Decomposition temperature | | not determined |
| pH | 6.8 - 7.2 | Temperature 25 °C |
| Soluble (g/L) in | | Soluble in: Isopropanol Alcohol |
| Soluble (g/L) in | | Insoluble in: |
| Fat solubility | | not determined |
| Water solubility | | not determined |
| Partition coefficient: n-octanol/water | | not determined |
| Vapour pressure | 0.0015 mm Hg | Temperature 25 °C |
| Vapour density | | not determined |
| Relative density | 1.08 - 1.12 g/cm ³ | Temperature 25 °C |
| particle characteristics | | not determined |
| Dynamic viscosity | 300 - 600 mPa*s | Temperature 25 °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 information available.

10.2 Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3 Possibility of hazardous reactions

No information 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 Phosphine oxide

Acute dermal toxicity >2000 mg/kg

Effective dose

LD50:

Species:

Rat

Method

OECD 402

ingredient Isobornyl acrylate

Acute dermal toxicity >5000 mg/kg

Effective dose

LD50:

Species:

Rabbit

Acute oral toxicity

ingredient Isobornyl acrylate

Acute oral toxicity >4890 mg/kg

Effective dose

LD50:

Species:

Rat.

ingredient Phosphine oxide

Acute oral toxicity >2000 mg/kg

Effective dose

LD50:

Species:

Rat

Method

OECD 401

Serious eye damage/irritation

In vitro eye test

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 Phosphine oxide

Acute (short-term) fish toxicity >90 mg/L

Effective dose

LC50:

Test duration 96 h

species

Danio rerio (zebrafish)

Method

OECD 203

Acute (short-term) toxicity to crustacea

ingredient Phosphine oxide

Acute (short-term) toxicity to crustacea >1175 mg/L

Effective dose

EC50

Test duration 48 h

species

Daphnia magna (Big water flea)

Method

OECD 202

Acute (short-term) toxicity to algae and cyanobacteria

ingredient Phosphine oxide

Acute (short-term) toxicity to algae and cyanobacteria >=260 mg/L

Effective dose

EC50

Test duration 72 h

species

Desmodesmus subspicatus

Method

OECD 201

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

Assessment/classification

not readily biodegradable (according to OECD criteria)

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Directive 2008/98/EC (Waste Framework Directive)

Before intended use

Appropriate disposal / Package

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

Waste code product 070208

hazardous waste Yes.

Waste name

other still bottoms and reaction residues

After intended use

Appropriate disposal / Product

Waste disposal according to official state regulations.

Waste code packaging 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 Maritime transport in bulk according to IMO instruments | not applicable | not applicable | not applicable |

Additional information - Land transport (ADR/RID)

remark

No dangerous good in sense of this transport regulation.

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

remark

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

15.2 Chemical Safety Assessment

Irritant

Harmful

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)

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

H413 May cause long lasting harmful effects to aquatic life.

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.