

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

### 1.1 Product identifier

**Trade name/designation** Photopolymer ABS Hi-Impact series (includes ABS Hi-Impact Black, ABS Hi-Impact Black M, ABS Hi-Impact Black 3SP, ABS Hi-Impact Gray, ABS Hi-Impact Gray M, ABS Hi-Impact Gray 3SP, D21, D21Black, D21 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-D45968 Gladbeck

Telephone: 49204398750

Telefax: 492043987599

E-mail: [info@envisiontec.com](mailto:info@envisiontec.com)

Information telephone: 49204398750

[www.envisiontec.com](http://www.envisiontec.com)

### 1.4 Emergency telephone number

Only available during office hours.

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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

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

#### 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.

##### hazard statements for health hazards

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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## health hazards

Repr. 2

## hazard statements for health hazards

H361f Suspected of damaging fertility.

## health hazards

STOT RE 2

## hazard statements for health hazards

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

## 2.2 Label elements

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

#### Hazard components for labelling

1,6 Hexanediol diacrylate

Acrylated monomer

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

#### Hazard pictograms



GHS05

GHS07

GHS08

#### Signal word

Danger

#### Hazard statements

##### hazard statements for health hazards

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H361f Suspected of damaging fertility.

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

##### 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.

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 face protection.

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of 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 mixture.

**SECTION 3: Composition / information on ingredients**

**3.1/3.2 Substances/Mixtures**

**Hazardous ingredients**

Acrylated oligomer	15 - 30 %
CAS Proprietary	
Skin Irrit. 2, H315 / Skin Sens. 1, H317 / Eye Irrit. 2, H319	
Diphenyl(2,4,6 thimethylbenzoylphosphine) oxide	1 - 2 %
CAS 75980-60-8	
EC 278-355-8	
Repr. 2, H361f / Aquatic Chronic 4, H413	
1,6 Hexanediol diacrylate	1 - 2 %
CAS 13048-33-4	
EC 235-921-9	
Skin Irrit. 2, H315 / Skin Sens. 1, H317 / Eye Irrit. 2, H319 / Aquatic Chronic 4, H413	
Acrylated monomer	10 - 20 %
CAS Proprietary	
Acute Tox. 4, H302 / Skin Sens. 1, H317 / Eye Dam. 1, H318 / STOT RE 2, H373	
Methacrylated oligomer	10 - 15 %
CAS Proprietary	
Skin Irrit. 2, H315 / Eye Irrit. 2, H319	
Acrylated oligomer	15 - 30 %
CAS Proprietary	
Skin Irrit. 2, H315 / Eye Irrit. 2, H319	

## 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

Consult an ophthalmologist.

#### Following 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

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## 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

Extinguishing powder  
Carbon dioxide (CO<sub>2</sub>)  
Foam

#### 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 (CO<sub>2</sub>)

### 5.3 Advice for firefighters

#### Special protective equipment for firefighters

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

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## 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

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## 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.

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## 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.

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## 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

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

#### Physical state

liquid

#### Colour

opaque

Different shades from Grey to Black

#### 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)	>150 °C
Auto-ignition temperature	not determined
Decomposition temperature	not determined
pH	not determined
Soluble (g/L) in	Alcohol
Fat solubility	not determined
Water solubility	practically insoluble
Partition coefficient: n-octanol/water	not determined
Vapour pressure	not determined
Vapour density	not determined
Relative density	1.05 - 1.12 g/cm <sup>3</sup> Temperature 25 °C
particle characteristics	not determined
Dynamic viscosity	300 - 600 mPa*s Temperature 30 °C
flow time	not determined

parameter

Method - source - remark

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 substance is chemically stable under recommended conditions of storage, use and temperature.

### 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 1,6 Hexanediol diacrylate

Acute dermal toxicity >3650 mg/kg

#### Effective dose

LD50:



Photopolymer ABS Hi-Impact  
series (includes ABS Hi-Impact  
Black, ABS Hi-Impact Black M,  
ABS Hi-Impact Black 3SP, ABS  
Hi-Impact Gray, ABS Hi-Impact  
Gray M, ABS Hi-Impact Gray 3SP,  
D21, D21Black, D21 Gray)

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**Species:**

Rabbit

**ingredient** Acrylated monomer

**Acute dermal toxicity** >2000 mg/kg

**Effective dose**

LD50:

**Species:**

Rat

**source**

Literature

**ingredient** Diphenyl(2,4,6 trimethylbenzoylphosphine) oxide

**Acute dermal toxicity** >2000 mg/kg

**Effective dose**

LD50:

**Species:**

Rat

**Method**

OECD 402

**Acute inhalation toxicity (vapour)**

**ingredient** 1,6 Hexanediol diacrylate

**Acute inhalation toxicity (vapour)** 0.41 mg/kg

**Effective dose**

LC50:

**Exposure time** 7 h

**Species:**

Rat

**Symptoms/ delayed effects**

No death occurred

**ingredient** Acrylated monomer

**Acute inhalation toxicity (vapour)** 5.28 mg/kg

**Effective dose**

LC50:

**Exposure time** 4 h

**Species:**

Rat

**Acute oral toxicity**

**ingredient** 1,6 Hexanediol diacrylate

**Acute oral toxicity** >5000 mg/kg

**Effective dose**

LD50:

**Species:**

Rat

**ingredient** Acrylated monomer

**Acute oral toxicity** 588 mg/kg

**Effective dose**

LD50:

**Species:**

Rat

**ingredient** Diphenyl(2,4,6 trimethylbenzoylphosphine) oxide

**Acute oral toxicity** >5000 mg/kg

**Effective dose**

LD50:

**Species:**

Rat

**Method**

OECD 401

**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.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

**Reproductive toxicity**

**Assessment/classification**

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide The results of animal studies suggest a fertility impairing effect.

**STOT-repeated exposure**

**STOT RE 1 and 2**

**Other information**

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

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## 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** 1,6 Hexanediol diacrylate

**Acute (short-term) fish toxicity** 4.6 - 10 mg/L

##### Effective dose

LC50:

**Test duration** 96 h

##### species

Leuciscus idus (golden orfe)

**ingredient** Diphenyl(2,4,6 thimethylbenzoylphosphine) oxide

**Acute (short-term) fish toxicity** 6.53 mg/L

##### Effective dose

LC50:

**Test duration** 48 h

##### species

Oryzias latipes (Ricefish)

**ingredient** Acrylated monomer

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

##### Effective dose

LC50:

**Test duration** 96 h

##### species

Danio rerio (zebrafish)

##### Acute (short-term) toxicity to crustacea

**ingredient** 1,6 Hexanediol diacrylate

**Acute (short-term) toxicity to crustacea** 2.6 mg/L

##### Effective dose

EC50

**Test duration** 48 h

##### species

Daphnia magna (Big water flea)

##### Method

OECD 202

**ingredient** Diphenyl(2,4,6 thimethylbenzoylphosphine) oxide

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

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## Effective dose

EC50

**Test duration** 48 h

## species

Daphnia magna (Big water flea)

## Method

OECD 202

**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

## Toxicity to other aquatic plants/organisms

**ingredient** 1,6 Hexanediol diacrylate

**Acute (short-term) toxicity to algae and cyanobacteria** 1.5 mg/L

## Effective dose

EC50

**Test duration** 72 h

**ingredient** Diphenyl(2,4,6 thimethylbenzoylphosphine) oxide

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

## Effective dose

EC50

**Test duration** 72 h

**ingredient** Acrylated monomer

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

## Effective dose

EC50

**Test duration** 72 h

## 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

#### Directive 2008/98/EC (Waste Framework Directive)

##### Before intended use

##### Appropriate disposal / Package

Handle contaminated packages 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

Dispose of waste according to applicable legislation.

**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 - 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.

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## **SECTION 15: Regulatory information**

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

### **15.2 Chemical Safety Assessment**

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

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## **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, R20 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H361f Suspected of damaging fertility.

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

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.

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