

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

### 1.1 Product identifier

**Trade name/designation** SmileGuard

### 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

#### Manufacturer

EnvisionTec GmbH

Brusseler, str. 51

Germany-45968 Gladbeck

Telephone: 1-49-2043-98750

E-mail: info@envisiontec.com

Information telephone: 1-49-2043-98750

<http://etec.desktopmetal.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.

##### health hazards

STOT SE 3

##### hazard statements for health hazards

H335 May cause respiratory irritation.

##### health hazards

Repr. 2

##### hazard statements for health hazards

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

#### Environmental hazards

Aquatic Chronic 3

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## 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

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

#### Hazard pictograms



GHS07



GHS08



GHS05



GHS09

#### 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.

H335 May cause respiratory irritation.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

##### Hazard statements for environmental hazards

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.

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 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

### Additional information

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

### 3.1/3.2 Substances/Mixtures

#### Hazardous ingredients

Methacrylated monomer	40 - 80 %
CAS Proprietary	
Skin Sens. 1B, H317 / Aquatic Chronic 2, H411	
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	1 - 3 %
CAS 75980-60-8	
EC 278-355-8	
Repr. 2, H361f	
Methacrylated oligomer	10 - 50 %
CAS Proprietary	
Skin Irrit. 2, H315 / Skin Sens. 1, H317 / Eye Irrit. 2, H319 / STOT SE 3, H335	
Methacrylated monomer	1 - 3 %
CAS Proprietary	
Acute Tox. 4, H302 / Acute Tox. 3, H311 / Skin Corr. 1A, H314 / Eye Dam. 1, H318 / STOT SE 3, H335	

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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General information

Remove contaminated, saturated clothing immediately.

#### Following inhalation

Provide fresh air. 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.

#### 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

### 5.1 Extinguishing media

#### Suitable extinguishing media

Foam

Extinguishing powder

Carbon dioxide (CO<sub>2</sub>)

#### 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.

#### Personal precautions

Use personal protection equipment.

#### 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

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

When using do not eat, drink, smoke, sniff. Work in well-ventilated zones or use proper respiratory protection. Avoid contact with skin, eyes and clothes. Remove contaminated, saturated clothing immediately. Wash hands before breaks and after work.

Provide eye shower and label its location conspicuously

Wash contaminated clothing prior to re-use.

#### Protective measures

#### Advices on safe handling

Provide room air exhaust at ground level. If handled uncovered, arrangements with local exhaust ventilation have to be used. 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 technical data sheet.

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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

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## 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

transparent

clear

light blue

#### Odour

Acrylate

	parameter	Method - source - remark
	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
	Kinematic viscosity	not determined
	Water solubility	practically insoluble
	Soluble (g/L) in	Isopropanol
	Fat solubility	not determined

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	parameter	Method - source - remark
	Partition coefficient: n-octanol/water	not determined
	Vapour pressure	not determined
	Density and/or relative density 1.06 - 1.12 g/cm <sup>3</sup> Temperature 25 °C	
	Relative vapour density	not determined
	particle characteristics	not determined
	Dynamic viscosity 300 - 600 mPa*s Temperature 30 °C	
	flow time	not determined

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## 9.2 Other information

No data available

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## 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

Oxidising agent

Reducing agent

Radical former

Peroxides

Alkali (lye)

Heavy metals

### 10.6 Hazardous decomposition products

Carbon monoxide

Carbon dioxide

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## SECTION 11: Toxicological information

### Additional information

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

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

#### Acute dermal toxicity

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

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

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## Effective dose

LD50:

### Species:

Rat

### Method

OECD 402

**ingredient** Methacrylated monomer

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

## Effective dose

LDLo:

### Species:

Rat

**ingredient** Methacrylated monomer

**Acute dermal toxicity** >1000 mg/kg

## Effective dose

LD50:

### Species:

Guinea pig

## Acute oral toxicity

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

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

## Effective dose

LD50:

### Species:

Rat

### Method

OECD 401

**ingredient** Methacrylated monomer

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

## Effective dose

LD50:

### Species:

Rat

**Acute oral toxicity** >1250 mg/kg

## Effective dose

LD50:

### Species:

Mouse

## 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.



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## 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-single exposure

#### STOT SE 3

### Irritation to respiratory tract

#### Assessment/classification

May cause respiratory irritation.

### 11.2 Information on other hazards

No information available.

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

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

##### Effective dose

LC50:

**Test duration** 48 h

##### species

Oryzias latipes (Ricefish)

**ingredient** Methacrylated monomer

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

##### Effective dose

LC50:

**Test duration** 96 h

##### species

Leuciscus idus (golden orfe)

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

**ingredient** Diphenyl(2,4,6-trimethylbenzoyl)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** Methacrylated monomer

**Acute (short-term) toxicity to crustacea** 1.2 mg/L

**Effective dose**

EC50

**Test duration** 48 h

**species**

Daphnia magna (Big water flea)

**Chronic (long-term) toxicity to aquatic invertebrate**

**ingredient** Methacrylated monomer

**Chronic (long-term) toxicity to aquatic invertebrate** >0.1 mg/L

**Effective dose**

EC10:

**Test duration** 21 d

**species**

Daphnia magna (Big water flea)

**Acute (short-term) toxicity to algae and cyanobacteria**

**ingredient** Methacrylated monomer

**Acute (short-term) toxicity to algae and cyanobacteria** 4.4 mg/L

**Effective dose**

ErC50:

**Test duration** 72 h

**species**

Desmodesmus subspicatus

## 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 Endocrine disrupting properties

No information available.

## 12.7 Other adverse effects

No information available.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Directive 2008/98/EC (Waste Framework Directive)

Before intended use

**Waste code product** 070208

**hazardous waste** Yes.

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## 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 number or ID number	3082	3082	3082
14.2 Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Methacrylated monomer)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	Environmentally hazardous substance, liquid, n.o.s.
14.3 Class(es)	9	9	9
14.4 Packing group	III	III	III
14.5 Environmental hazards	Yes.	No	Yes.
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)

Hazard label(s)	9
Classification code	M6
Limited quantity (LQ)	5 L
Hazard identification number (Kemler No.)	90
tunnel restriction code	-
transport category	3

### Additional information - Sea transport (IMDG)

Marine pollutant	Yes.
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### Additional information - Air transport (ICAO-TI / IATA-DGR)

Limited quantity (LQ)	30
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## SECTION 15: Regulatory information

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

#### National regulations

#### Further details

TSCA Inventory list: This product is a medical device and not subject to chemical notification.

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SARA 311/312 Hazard Categories: Refer to Section 2 for OSHA Hazard Classification. SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65 Components: This product does not contain chemicals at levels greater or equal to 0.1 wt% which are known to the state of California to cause cancer.

## 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 Harmful if swallowed.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

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.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

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.