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Safety data sheet: Zortrax Photopolymer Resin BASIC

# SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/ UNDERTAKING

#### 1.1. PRODUCT IDENTIFIER

Trade name: ZORTRAX PHOTOPOLYMER RESIN BASIC (Pigment-free)

# 1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES AD-VISED AGAINST

Identified use:For use with 3D printersUse advised against:Other than listed above

# 1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Supplier: Zortrax S.A.

Lubelska 34 10-409 Olsztyn

Poland

TEL. +48 89 672 40 01 email: office@zortrax.com

# 1.4. EMERGENCY TELEPHONE NUMBER

Emergency telephone number: 112 - emergency number

+48 89 672 40 01 (8.00 am-4.00 pm) - supplier's number

# SECTION 2. HAZARDS IDENTIFICATION

# 2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

# According to the Regulation (EC) No 1272/2008:

Hazard statements:

Skin corrosion/irritation, Hazard Category 2

Serious eye damage/eye irritation, Hazard Category 1

Sensitisation - Skin, Hazard Category 1

Hazardous to the aquatic environment - Acute Hazard, Category 1

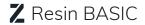
Hazardous to the aquatic environment - Chronic Hazard, Category 2

Precautionary statements:

Causes skin irritation.

Causes serious eye damage.

May cause an allergic skin reaction.



Very toxic to aquatic life

Toxic to aquatic life with long lasting effects.

# 2.2. LABEL ELEMENTS

#### According to the Regulation (EC) No 1272/2008:

# Hazard-determining components of labelling:

1,6-Hexanediol diacrylate

Hexane, 1,6-diisocyanato, polymers with 2-hydroxyethyl acrylate blocked 1,6-diisocyanatohexane homopolymer, 2-hydroxyethyl acrylate and pentaerythritol triacrylate blocked

Pentaerythritol tetraacrylate

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

# Signal word:

Danger

#### Pictograms:







#### Hazard statements:

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H400 Very toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

# Precautionary statements:

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

P102 Keep out of reach of children.

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

P501 Dispose of waste according to applicable legislation.

# Special labelling of certain mixtures:

EUH204 Contains isocyanates. May produce an allergic reaction.



Labelling of packages < 125 ml:

Signal word:

Danger

Pictograms:







Hazard statements:

H317-H318

Precautionary statements:

P101-P102-P280-P305+P351+P338-P310-P501

# 2.3. OTHER HAZARDS

No information available

# SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

# 3.1. SUBSTANCES

Not applicable

# 3.2. MIXTURES

# Hazardous components

Name	CAS	Content	CLP classification
	EC	%	
	Index No		
	REACH Registration No		
1,6-Hexanediol diacrylate	13048-33-4	50 - 100	Skin Irrit. 2, H315
	235-921-9		Eye Irrit. 2, H319
	607-109-00-8		Skin Sens. 1, H317
	01-2119484737-22		Aquatic Acute 1, H400
			Aquatic Chronic 2, H411
Hexane, 1,6-diisocyanato,	2123508-19-8	25 - 50	Skin Irrit. 2, H315
polymers with 2-hydro- xyethyl acrylate blocked			Eye Irrit. 2, H319
1,6-diisocyanatohexane			Skin Sens. 1, H317
homopolymer, 2-hydroxy-			
ethyl acrylate and pentae- rythritol triacrylate blo-			
cked			



Pentaerythritol tetraacry-	4986-89-4	1 - 10	Acute Tox. 4, H302
late	225-644-1		Skin Irrit. 2, H315
	607-122-00-9		Eye Dam. 1, H318
			Skin Sens. 1, H317
			Aquatic Chronic 2, H411
Diphenyl(2,4,6-trimethyl-	75980-60-8	1 - < 3	Repr. 2, H361f
benzoyl)phosphine oxide	278-355-8		Skin Sens. 1B, H317
	015-203-00-X		Aquatic Chronic 2, H411

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

# SECTION 4. FIRST AID MEASURES

#### 4.1. DESCRIPTION OF FIRST AID MEASURES

After inhalation: Provide fresh air. If breathing is irregular or stopped, ad-

minister artificial respiration. Medical treatment necessary.

After contact with skin: After contact with skin, wash immediately with plenty of

water and soap. Take off immediately all contaminated clothing and wash it before reuse. In case of skin reactions,

consult a physician.

After contact with eyes: 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. Remove contact lenses, if

present and easy to do. Continue rinsing.

After ingestion: Observe risk of aspiration if vomiting occurs. Rinse mouth

immediately and drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person or a person with cramps. Get medical ad-

vice/attention.

# 4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Persons already sensitised to diisocyanates may develop allergic reactions when using this product.

# 4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREAT-MENT NEEDED

Treat symptomatically.

# SECTION 5. FIREFIGHTING MEASURES

#### 5.1. EXTINGUISHING MEDIA

Suitable extinguishing media:

Co-ordinate firefighting measures to the fire surroundings.



#### SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE 5.2.

Non-flammable. Thermal decomposition can lead to the release of toxic gases and vapors.

#### 5.3. **ADVICE FOR FIREFIGHTERS**

Special protective equipment for firefighters:

Wear a self-contained breathing apparatus and chemical

protective clothing. Full protection suit.

Additional information:

Extinguish fires with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

#### **ACCIDENTAL RELEASE MEASURES** SECTION 6.

#### 6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCE-**DURES**

Provide adequate ventilation. Do not breathe gas/fume/vapor/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

#### 6.2. ENVIRONMENTAL PRECAUTIONS

Do not allow to enter into surface water or drains.

#### 6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

#### 6.4. REFERENCE TO OTHER SECTIONS

Safe handling – SECTION 7 Personal protective equipment - SECTION 8 Disposal - SECTION 13

#### HANDI ING AND STORAGE SECTION 7.

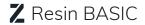
#### PRECAUTIONS FOR SAFE HANDLING 7.1.

# Advice on safe handling

Provide adequate ventilation. Do not breathe gas/fume/vapor/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

#### Advice on protection against fire and explosion

Usual measures for fire prevention.



#### Further information on handling

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. People who suffer from skin sensitazion problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

# 7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

# Requirements for storage rooms and vessels

Keep container tightly closed. Store in a dry place. Provide adequate ventilation as well as local exhaustion at critical locations. Keep locked up. Store in a place accessible by authorized persons only.

#### Advice on storage compatibility

No information available

# Further information on storage conditions

Protect against: UV-radiation/sunlight, Humidity.

# 7.3. SPECIFIC END USE(S)

3D printing, resin

# SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. CONTROL PARAMETERS

#### **DNEL and DMEL values**

CAS No	Components	Components		
DNEL type		Exposure route	Effect	Value
75980-60-8	Diphenyl(2,4,6-trimet	Diphenyl(2,4,6-trimethylbenzoyl)phosphinoxid		
DNEL (worker, long-term)		inhalation	systemic	3,5 mg/m <sup>3</sup>
DNEL (worker, long-term)		dermal	systemic	1 mg/kg KG/d

#### **PNEC values**

CAS No	Components	
Environmental compartment		Value
75980-60-8	Diphenyl(2,4,6-trimethylbenzoyl)pho	sphinoxid
Freshwater		0,004 mg/l
Freshwater (intermittent release)		0,035 mg/l
Sediment (freshwater)		0,029 mg/kg
Sediment (marine water)		0,029 mg/kg
Soil	-	0,056 mg/kg

# Additional information on occupational exposure limit values:

There are currently no occupational exposure limit values.



# 8.2. EXPOSURE CONTROLS







#### Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

# Protective and hygiene measures

Remove contaminated, soaked clothing immediately. Draw up and observe a skin protection program. Wash hands and face before breaks and after work and take a shower if necessary. Do not eat, drink or smoke when using this product. Do not breathe gas/fume/vapor/spray. Avoid contact with skin, eyes and clothes.

Persons already sensitised to diisocyanates may develop allergic reactions when using this product. People who suffer from skin sensitazion problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this preparation.

#### Eye/face protection

Wear eye/face protection.

#### Hand protection

Wear protective gloves.

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

#### Skin protection

Wear suitable protective clothing.

# Respiratory protection

In the case of inadequate ventilation, wear respiratory protection.

# Environmental exposure controls

Do not allow to enter into surface water or drains.

# SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

# 9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Physical state: Liquid Color: Pigment-free Odor: like: Acrylate Odor threshold: Not determined Not determined рН: Melting point: Not determined > 100° C [212° F] Initial boiling point and boiling range: > 110° C [230° F] Flash point:

#### SAFETY DATA SHEET



Evaporation rate: Not determined Flammability: Not applicable

Upper/lower flammability or explosive limits: Lower explosion limits: Not determined

Upper explosion limits: Not determined

Vapor pressure: < 1 hPa at 20° C [68° F]

Vapor density: Not determined Relative density: Not determined Solubility (water): poorly soluble Partition coefficient: n-octanol/water: Not determined >230° C [446° F] Auto-ignition temperature: Not determined Decomposition temperature: Viscosity: Not determined Explosive properties: Not explosive Oxidizing properties: Not oxidising

#### 9.2. OTHER INFORMATION

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# SECTION 10. STABILITY AND REACTIVITY

# 10.1. REACTIVITY

No hazardous reaction when handled and stored according to provisions.

# 10.2. CHEMICAL STABILITY

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

#### 10.3. POSSIBILITY OF HAZARDOUS REACTIONS

No hazardous reactions are known.

# 10.4. CONDITIONS TO AVOID

Protect against: UV-radiation/sunlight, Humidity.

# 10.5. INCOMPATIBLE MATERIALS

No information available.

# 10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition can lead to the release of toxic gases and vapors.



# SECTION 11. TOXICOLOGICAL INFORMATION

# 11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

Acute toxicity: Based on available data, the classification criteria are not

CAS No	Components	Components			
	Exposure route	Dose	Species	Source	Method
13048-33-4	hexamethylene o	iacrylate; hexane-1,6-0	diol diacrylate		
	oral	LD50 5000 mg/kg	Rat	Manufacturer	
	dermal	LD50 3650 mg/kg	Rabbit	Manufacturer	OECD 402
4986-89-4	pentaerythritol to	pentaerythritol tetraacrylate			
	oral	ATE 500 mg/kg			
75980-60-8	diphenyl(2,4,6-tri	diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide			
	oral	LD50 > 5000 mg/kg	Rat	Manufacturer	
	dermal	1.050 > 2000  mg/kg	Rat	Manufacturer	

Irritation and corrosivity: Causes skin irritation

Causes serious eye damage

Sensitising effects: Contains isocyanates.

May cause an allergic skin reaction (hexamethylene diacrylate; hexane-1,6-diol diacrylate; Hexane, 1,6-diisocyanato-, polymers with 2-hydroxyethyl acrylate-blocked 1,6-diisocyanatohexane homopolymer, 2-hydroxyethyl acrylate- and pentaerythritol triacrylate-blocked; pentaerythritol tetraacrylate; diphenyl(2,4,6-trimethylbenzoyl)

phosphine oxide)

Carcinogenic/mutagenic/toxic effects for reproduction: Based on available data, the classification criteria are not

met.

STOT-single exposure: Based on available data, the classification criteria are not

met.

STOT-repeated exposure: Based on available data, the classification criteria are not

met.

Aspiration hazard: Based on available data, the classification criteria are not

met.

Additional information on tests: Persons already sensitised to diisocyanates may develop

allergic reactions when using this product. People who suffer from skin sensitazion problems, asthma, allergies, chronic or recurring respiratory illnesses should not be

deployed in any process using this preparation.



# SECTION 12. ECOLOGICAL INFORMATION

# 12.1. TOXICITY

Toxic to aquatic life with long lasting effects.

CAS No	Components					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
13048-33-4	Hexamethylendiacry	lat; Hexan-1,6-diold	liacrylat			
	Toxicity to bacteria	(270 mg/l)	0,5 h	Activated sludge	Manufacturer	OECD 209
75980-60-8	Diphenyl(2,4,6-trimethylbenzoyl)phosphinoxid					
	Toxicity to algae	ErC50 > 2,01 mg/l	72 h	Scenedesmus subspicatus	Manufacturer	
	Toxicity to crustace- ans	EC50 3,53 mg/l	48 h	Daphnia magna	Manufacturer	
	Toxicity to bacteria	(> 1000 mg/l)	3 h	Activated sludge	Manufacturer	

# 12.2. PERSISTENCE AND DEGRADABILITY

The product has not been tested.

CAS No	Components			
	Method	Value	d	Source
	Rating			
13048-33-4	Hexamethylendiacrylat; Hexan-1,6-dioldiacrylat			
	OECD 310	60 - 70%	28	Manufacturer
	Readily biodegradable (in accordance with OECD criteria)			
75980-60-8	Diphenyl(2,4,6-trimethylbenzoyl)phosphinoxid			
	Biodegradability, water	0 - 10%	28	Manufacturer
	Not readily biodegradable			

# 12.3. BIOACCUMULATIVE POTENTIAL

The product has not been tested.

# N-octanol/water partition coefficient

CAS No	Components	Log Pow
13048-33-4	Hexamethylendiacrylat; Hexan-1,6-dioldiacrylat	2,81
75980-60-8	Diphenyl(2,4,6-trimethylbenzoyl)phosphinoxid	3,1

# **BCF**

CAS No	Components	BCF	Species	Source
75980-60-8	Diphenyl(2,4,6-trimethylbenzoyl)phosph inoxid		Cyprinus carpio (common carp)	Manufacturer



# 12.4. MOBILITY IN SOIL

The product has not been tested.

# 12.5. RESULTS OF PBT AND VPVB ASSESSMENT

The product has not been tested.

#### 12.6. OTHER ADVERSE EFFECTS

No information available.

#### Further information:

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

# SECTION 13. DISPOSAL CONSIDERATIONS

# 13.1. WASTE TREATMENT METHODS

#### Advice on disposal:

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

#### Contaminated packaging:

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

# SECTION 14. TRANSPORT INFORMATION

# LAND TRANSPORT (ADR/RID)

14.1. UN number: UN 3082

14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (hexamethylene dia-

crylate; hexane-1,6-diol diacrylate; pentaerythritol tetraacrylate)

14.3. Transport hazard class(es): 914.4. Packing group: III

Hazard label: 9



Classification code: M6

Special Provisions: 274 335 375 601

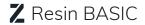
Limited quantity: 5 L

Excepted quantity: E1

Transport category: 3

Hazard identification number: 90

Tunnel restriction code: -



# INLAND WATERWAYS TRANSPORT (ADN)

14.1. UN number: UN 3082

14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (hexamethylene dia-

crylate; hexane-1,6-diol diacrylate; pentaerythritol tetraacrylate)

14.3. Transport hazard class(es): 914.4. Packing group: IIIHazard label: 9



Classification code: M6

Special Provisions: 274 335 375 601

Limited quantity: 5 L Excepted quantity: E1

# MARINE TRANSPORT (IMDG)

14.1. UN number: UN 3082

14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (hexamethylene dia-

crylate; hexane-1,6-diol diacrylate; pentaerythritol tetraacrylate)

14.3. Transport hazard class(es): 9
14.4. Packing group: III
Hazard label: 9



Special Provisions: 274, 335, 969

Limited quantity: 5 L

Excepted quantity: E1

EmS: F-A, S-F

# AIR TRANSPORT (ICAO-TI/IATA-DGR)

14.1. UN number: UN 3082

14.2. UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (hexamethylene

diacrylate; hexane-1,6-diol diacrylate; pentaerythritol tetraacrylate)

14.3. Transport hazard class(es):914.4. Packing group:IIIHazard label:9



Special Provisions: A97 A158 A197

#### SAFETY DATA SHEET



Limited quantity - passenger: 30 kg G
Passenger (Limited quantity): Y964
Excepted quantity: E1
Packing instructions IATA - passen- 964

ger:

Maximum net quantity IATA - passen- 450 L

ger:

Packing instructions IATA - cargo: 964 Maximum net quantity IATA - cargo: 450 L

# 14.5. ENVIRONMENTAL HAZARDS

Environmentally hazardous: Yes



Danger releasing substance: Heksametylendiakrylat; Heksan-1,6-dioldiakrylat; Pentae-

rythritoltetraacrylat

# 14.6. SPECIAL PRECAUTIONS FOR USER

No information available.

# 14.7. TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL AND THE IBC CODE

Not applicable

# SECTION 15. REGULATORY INFORMATION

# 15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

#### EU regulatory information:

Restrictions on use (REACH, annex XVII): Heksametylendiakrylat; Heksan-1,6-dioldiakrylat

Entry 3:

Information according to 2012/18/EU (SEVESO III): E1 Hazardous to the aquatic environment

National regulatory information:

Employment restrictions: Observe the restrictions included in the Council Directive

94/33/EC on the protection of young people at work.

Water contamination class (D): 3 - highly water contaminating

Skin sensitization: Causes allergic and hypersensitivity reactions.

# 15.2. CHEMICAL SAFETY ASSESSMENT

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



# SECTION 16. OTHER INFORMATION

# Abbreviations and acronyms:

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

**UN: United Nations** 

CAS: Chemical Abstracts Service
DNEL: Derived No Effect Level

DMEL: Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

ATE: Acute toxicity estimate

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50% LL50: Lethal loading, 50% EL50: Effect loading, 50%

EC50: Effective Concentration 50%

ErC50: Effective Concentration 50%, growth rate

NOEC: No Observed Effect Concentration

BCF: Bio-concentration factor

PBT: persistent, bioaccumulative, toxic vPvB: very persistent, very bioaccumulative

ADR: Accord européen relatif au transport international des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road )

RID: Regulations concerning the international carriage of dangerous goods by rail

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: International Maritime Code for Dangerous Goods

EmS: Emergency Schedules MFAG: Medical First Aid Guide

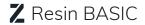
IATA: International Air Transport Association ICAO: International Civil Aviation Organization

MARPOL: International Convention for the Prevention of Marine Pollution from Ships

IBC: Intermediate Bulk Container
VOC: Volatile Organic Compounds
SVHC: Substance of Very High Concern

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Dam. 1; H318	Calculation method
Skin Sens. 1; H317	Calculation method



Aquatic Acute 1; H400	Calculation method
Aquatic Chronic 2; H411	Calculation method

#### Relevant H and EUH statements (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.
H361f Suspected of damaging fertility.

H400 Very toxic to aquatic life

H411 Toxic to aquatic life with long lasting effects.

EUH204 Contains isocyanates. May produce an allergic reaction.

Changes introduced in the update: Section 1-16

#### Further Information:

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights. The receiver of our product is responsible for adhering to existing laws and regulations.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)

End of Safety Data Sheet



Zortrax S.A. Lubelska 34 10-409 Olsztyn, Poland NIP: 5242756595 REGON: 146496404 Contact
Office: office@zortrax.com
Sales Department: sales@zortrax.com
Support Center: support@zortrax.com