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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 (White/Ivory; Grey)

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Identified use: For use with 3D printers
Use 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 number

SECTION 2. HAZARDS IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

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

Product is classified as hazardous

Skin Irrit. 2 H315 Causes skin irritation

Eye Irrit. 2 H319 Causes serious eye irritation

Skin Sens. 1 H317 May cause an allergic skin reaction.

Physico-chemical hazards: none

Health hazards: causes skin and eye irritation, may cause an allergic skin reaction

Environmental hazards: none

2.2. LABEL ELEMENTS

According to the Regulation (WE) 1272/2008:

Pictograms:



GHS07

Signal Word:

DANGER

Hazard statements:

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

Precautionary statement:

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

P102 Keep out of reach of children.

P280 Wear protective gloves and eye 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

P333+P313 If skin irritation or rash occurs: Get medical advice/attention

P501 Dispose of contents and containers to entities authorized to dispose of hazardous waste

Additional information:

Contains: Epoxy phenolic resin, Hexamethylene diacrylate

Labelling of packages < 125 ml:

Pictograms:



GHS07

Signal Word:

DANGER

Hazard statements:

H317 May cause an allergic skin reaction.

Precautionary statement:

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

P102 Keep out of reach of children.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention

P501 Dispose of contents and containers to entities authorized to dispose of hazardous waste

Additional information:

Contains: Epoxy phenolic resin, Hexamethylene diacrylate

2.3. OTHER HAZARDS

Product does not meet PBT or vPvB criteria according to XIII of REACH regulation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1. SUBSTANCES**

Not applicable

3.2. MIXTURES

Product is a mixture. It contains dangerous ingredients listed below and other non-hazardous ingredients or ingredients below the threshold values:

Name	CAS EC Index No REACH Registration No	Content % w/w	CLP classification
Epoxy phenolic resin	61788-97-4 612-377-4 Not applicable Not applicable**	40 – 50	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317
Hexamethylene diacrylate	13048-33-4 235-921-9 607-109-00-8 Not applicable**	20 - 40	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317

* substance has established threshold limit values in several countries. Obligatory check relevant regulations regarding hazardous substances in work environment.

** Substance is not subject to registration requirements due to not exceeding 1 tone/year tonnage band

Meaning of hazard categories and H phrases – See Section 16

SECTION 4. FIRST AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

General recommendations:	Stop the exposure to the product. In case of any adverse effect call medical help immediately. Show SDS or label of product. Inform medical personnel about first aid provided to the victim. Remove any contaminated clothing.
Protection of personnel providing first aid:	Do not take any action which may pose a risk to first-aider unless adequately trained and aware of risks.
Contamination of the skin:	Wash skin with soap and water. Remove any contaminated clothing and shoes and clean before use. Seek medical attention if irritation develops.
Contamination of the eyes:	Hold eye open and rinse continuously with a gentle stream of clean running water for at least 15 minutes. Seek medical attention if any irritation develops.
Inhalation:	Remove from source of exposure into fresh air. Seek medical attention if any irritation develops.
Ingestion:	First aid is unlikely to be required but if necessary, rinse mouth repeatedly with water, ensuring that the water is not swallowed. Seek medical attention.

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

Acute symptoms:	
Eyes:	redness, pain, lachrymation
Skin:	irritation, rash
Ingestion:	no specific symptoms
Inhalation:	no data
Delayed symptoms	no data
Effects of exposure	no data

4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Notes to physician:	No specific antidote, treat symptomatically.
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SECTION 5. FIREFIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

Suitable extinguishing media:	Use carbon dioxide or dry chemical for small fires; aqueous foam or water spray for large fires
Unsuitable extinguishing media:	Not determined – consider compatibility with surrounding materials.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Special hazards arising from the substance or mixture: Formation of toxic, irritating gases is possible from the decomposition of the methacrylate resins. This product is not hypergolic.

5.3. ADVICE FOR FIREFIGHTERS

Special protective equipment for firefighters: Wear full protective equipment (bunker gear) and a self-contained breathing apparatus (SCBA).

General: Remove from the endangered area all unauthorized persons, not involved in extinguishing the fire, order evacuation if necessary. Remove stock of the product not covered with fire from risk area.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

For non-emergency personnel:

Safety glasses with side shields, gloves and laboratory coat recommended.

For emergency responders:

No specific recommendations

6.2. ENVIRONMENTAL PRECAUTIONS

Avoid releases to the environment. Report releases as required by local and national authorities.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Exposure to sunlight or artificial light will cause the resin to polymerize. Spread the paste to maximize the surface area. Once the material is hard, pick up and place into a container for disposal.

6.4. REFERENCE TO OTHER SECTIONS

Safe handling – SECTION 7

Personal protective equipment – SECTION 8

Waste disposal – SECTION 13

SECTION 7. HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

Avoid contact with the eyes, skin and clothing. Avoid breathing dust or fumes. Wear protective clothing and equipment as described in Section 8. Use with adequate ventilation. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Do not reuse containers. Empty containers retain product residue and can be hazardous. Follow all SDS precautions when handling empty containers.

Industrial hygiene:

- ensure good ventilation (overall and local exhausted ventilation)
- ensure place for eyes and skin rinsing
- wash hands with soap and water before eating, smoking and after work
- use general caution while working with chemical substances

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in a tightly closed container in a cool (29 - 90° F / -1.7 - 32.2° C), well-ventilated location away from incompatible materials. Do not store near high temperatures, light or ignition sources. Do not store in an oxygen-free environment. Avoid freezing the material.

7.3. SPECIFIC END USE(S)

See SECTION 1.2. For professional use only.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. CONTROL PARAMETERS

Occupational Exposure Limit Value: Not applicable

DNELs (Derived No Effect Levels) available for mixture components: Hexamethylene diacrylate (CAS: 13048-33-4)

Recommended monitoring procedures: not applicable

Exposure route	WORKERS				GENERAL POPULATION			
	Systemic Effects		Local Effects		Systemic Effects		Local Effects	
	Long-term	Acute	Long-term	Acute	Long-term	Acute	Long-term	Acute
INHALATION	24.5 mg/m ³	n. d.	n. d.	n. d.	7.2 mg/m ³	n. d.	n. d.	n. d.
DERMAL	2.77 mg/kg bw/day	n. d.	n. d.	n. d.	1.66 mg/kg bw/day	n. d.	n. d.	n. d.
ORAL	n. d.	n. d.	n. d.	n. d.	2.1 mg/kg bw/day	n. d.	n. d.	n. d.
EYE	n. d.	n. d.	n. d.	n. d.	n. d.	n. d.	n. d.	n. d.

n. i. r. – no identified risks

n. d. – no data

8.2. EXPOSURE CONTROLS

Technical exposure controls

Provide adequate mechanical ventilation. Additional local ventilation might be required when product's vapors concentration exceeds acceptable limits.

Personal protection measures

The need of use and selection of appropriate personal protective equipment should depend on type of threat posed by the product, workplace conditions and handling of the product.

Respiratory protection

None should be needed in normal use. If this material is handled at elevated temperature or under mist forming conditions, approved respiratory protection equipment should be used. Selection and use of respiratory equipment must be in accordance with applicable regulations and good industrial hygiene practice.

Hand protection

Use protective gloves: nitrile rubber > 0.5 mm (suitable gloves tested to EN374). Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility, etc) is noticed

Eye protection

Shielded protective glasses

Skin protection

Protective clothing

Protective equipment standards:

EN 140:2001 Respiratory protective devices - Half masks and quarter masks - Requirements, testing, marking

EN 143:2004 Respiratory protective devices - Particle filters - Requirements, testing, marking

EN 149+A1:2010 Respiratory protective devices - Filtering half masks to protect against particles
Requirements, testing, marking

EN 14387+A1:2010 Respiratory protective devices - Gas filter(s) and combined filter(s)
Requirements, testing, marking

EN 374-1:2005 Protective gloves against dangerous chemicals and micro-organisms
Part 1: Terminology and performance requirements for chemical risks

EN 374-2:2005 Protective gloves against chemicals and micro-organisms
Part 2: Determination of resistance to penetration

EN 374-3:2005 Protective gloves against chemicals and micro-organisms
Part 3: Determination of resistance to permeation by chemicals

EN 166:2005 Personal eye protection. Specifications

EN 14605+A1:2010 Protective clothing against liquid chemicals. Performance requirements for clothing with liquid-tight (Type 3) or spray-tight (Type 4) connections, including items providing protection to parts of the body only (Types PB [3] and PB [4])

EN 20344:2012 Personal protective equipment. Test methods for footwear

Environmental exposure controls:

Do not allow to enter large amounts of product into ground water, sewage, waste water or soil.

PNECs (Predicted No Effect Concentrations) for mixture components:

Hexamethylene diacrylate (CAS: 13048-33-4)

Environment compartment	PNEC
Fresh water	1.5 µg/L
Intermittent releases (fresh water)	n. d.
Marine water	150 ng/L
Intermittent releases (marine water)	n. d.
Sewage treatment plant	2.7 mg/L
Sediment (fresh water)	24.3 µg/kg sediment dw
Sediment (marine water)	2.43 µg/kg sediment dw
Air	n. d.
Soil	3.97 µg/kg soil dw
Hazard for Predators	n. d.

n. d. – no data

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Physical state:

Liquid

Color:

various

Odor:

Ester-like odor

Odor threshold:

Not applicable

pH:

No data

Melting point/freezing point:

No data

Initial boiling point and boiling range:

No data

Flash point:

> 380° C

Evaporation rate:

No data

Flammability:

Not applicable

Upper/lower flammability or explosive limits:

No data

Vapor pressure:

No data

Vapor density:

No data

Relative density:

1.10 - 1.125 at 25° C

Solubility:

Nearly insoluble in water.

Partition coefficient: n-octanol/water:

Not applicable

Auto-ignition temperature:

Product does not self-ignite

Decomposition temperature:

No data

Viscosity:

150 - 400 cps (25° C)

Explosive properties:

None, no explosive ingredients

Oxidizing properties:

None, no oxidizing ingredients

9.2. OTHER INFORMATION

Ignition Temperature: > 450° C

SECTION 10. STABILITY AND REACTIVITY

10.1. REACTIVITY

Not known.

10.2. CHEMICAL STABILITY

Stable if handled and stored as directed.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS

Heat, light, sources of contamination or inhibitor depletion may cause spontaneous polymerization generating heat and pressure. Closed containers may rupture or explode during runaway polymerization.

10.4. CONDITIONS TO AVOID

Avoid heat, light and sources of contamination.

10.5. INCOMPATIBLE MATERIALS

Reducing and oxidizing agents, peroxides and amines.

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition may release pungent smoke or fumes, carbon and nitrogen oxides.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

Product was not tested for toxicological properties. Hazard classification was derived by calculation methods according to Regulation (EC) 1272/2008 based on hazardous ingredients contents.

Acute toxicity:	Oral	product does not meet criteria for classification, ATEmix > 2000 mg/kg
	Dermal	product does not meet criteria for classification, ATEmix > 2000 mg/kg
	Inhalation	product does not meet criteria for classification, ATEmix > 5 mg/l
Skin corrosion/irritation:		Product classified as causing skin irritation
Serious eye damage/irritation:		Product classified as causing serious eye damage.

Respiratory or skin sensitization:	Product may cause an allergic skin reaction.
Germ cell mutagenicity:	Product does not contain any compounds with germ cell mutagenicity hazard.
Carcinogenicity:	Product does not contain any compounds with carcinogenic hazard
Reproductive toxicity:	Product does not contain any compounds with reprotoxic hazard
STOT-single exposure:	Product does not meet criteria for classification
STOT-repeated exposure:	Product does not meet criteria for classification
Aspiration hazard:	Product does not meet criteria for classification
Potential health hazards:	
Ingestion:	no data
Inhalation:	no data
Skin:	skin irritation and sensitization
Eyes:	eye irritation

Available toxicological data for components of the product:

No data

SECTION 12. ECOLOGICAL INFORMATION

12.1. TOXICITY

Product was not tested for environmental hazards. Hazard classification was derived by calculation methods according to regulation 1272/2008 based on hazardous ingredients contents.
Product does not meet criteria for classification.

12.2. PERSISTENCE AND DEGRADABILITY

No information available.

12.3. BIOACCUMULATIVE POTENTIAL

No information available.

12.4. MOBILITY IN SOIL

No information available.

12.5. RESULTS OF PBT AND VPVB ASSESSMENT

Not applicable.

12.6. OTHER ADVERSE EFFECTS

No information available.

Available ecotoxicological data for components of the product:

No data

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. WASTE TREATMENT METHODS

If it is possible, reduce the level of waste production. Residues of the product should be treated as hazardous waste. The level of hazardousness of waste containing this product should be assessed in accordance with applicable regulations. Disposal should be made through a company authorized to dispose of hazardous waste, in accordance with national and local regulations. Do not remove to sewage, water, soil.

European Waste Catalogue:

HP 4 Irritant

HP 13 Sensitizing

Disposing of the packaging:

Contaminated packaging should be treated as hazardous waste.

SECTION 14. TRANSPORT INFORMATION

Transport classification concerns only when transported in bulk. Marker itself, as a ready to use article does not fall under hazardous goods transport regulations.

14.1. UN NUMBER

DOT, ADR, IMDG, IATA – not applicable

14.2. UN PROPER SHIPPING NAME

DOT, ADR, IMDG, IATA – not applicable

14.3. TRANSPORT HAZARD CLASS(ES)

DOT, ADR, IMDG, IATA – not applicable

14.4. PACKING GROUP

DOT, ADR, IMDG, IATA – not applicable

14.5. ENVIRONMENTAL HAZARDS

Not applicable

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

-Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC,

- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR),

- Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC.

15.2. CHEMICAL SAFETY ASSESSMENT

Chemical safety assessment was not conducted for the product.

SECTION 16. OTHER INFORMATION

Explanation of abbreviations and acronyms used in the SDS:

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

CAS – Chemical Abstracts Service

EC – number assigned to chemical substance in European Inventory of Existing Chemical Substances or European List of Notified Chemical Substances or in No-Longer Polymers list.

ATEmix – estimated acute toxicity of a mixture

DNEL – derived no effect level

PNEC – predicted no effect concentration

PBT – persistence, bioaccumulation, toxicity

vPvB – very persistent, very bioaccumulative

LC50 – concentration causing death of 50% of tested population

EC50 – concentration causing observable effect of 50% of tested population

UN number – identification number of the material (the number of UN, UN number)

ADR – European Agreement concerning the international carriage of dangerous goods by road

IMDG – International Maritime Dangerous Goods Code

This SDS was prepared in accordance with Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Classification of the product was based on the content of ingredients and according to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Recommendation and restriction of use: Use according to the instructions indicated on the label.

Additional safety information can be obtained from the manufacturer.

Source of data: this SDS was prepared based on SDS of the product's ingredients, physico-chemical data for the product, the manufacturer's knowledge and experience and according to the actual legislation.
European Chemicals Agency (ECHA)
C&L Inventory

Disclaimer:

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

End of Safety Data Sheet



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