

Issuing date: 03.01.2018

Revision date: 27.01.2025

Version: 4.10 / ENG

## Safety data sheet: Z-PLA

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

#### 1.1. PRODUCT IDENTIFIER

Trade name: Z-PLA

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

Identified use: thermal processing for 3D printing in Layer Plastic Deposition (LPD) technology.

Use advised against: other than listed above

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

Supplier: Zortrax S.A.  
Lubelska 43a  
10-410 Olsztyn  
Poland  
+48 89 672 40 01

Made in: China

#### 1.4. EMERGENCY TELEPHONE NUMBER

Emergency telephone number: 112

### SECTION 2. HAZARDS IDENTIFICATION

#### 2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

This product is not classified as dangerous according to Regulation (EC) No 1272/2008.

#### 2.2. LABEL ELEMENTS

Hazard pictogram(s): not applicable  
Signal word(s): not applicable  
Hazard statement(s): not applicable  
Precautionary statement(s): not applicable

#### 2.3. OTHER HAZARDS

The product does not meet the criteria for PBT or vPvB classification.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. SUBSTANCES

Not applicable

### 3.2. MIXTURES

PLA (polylactic acid) - >98% - CAS 9051-89-2

Additives and colorants - 0 ~ 2%

## SECTION 4. FIRST AID MEASURES

### 4.1. DESCRIPTION OF FIRST AID MEASURES

Eye contact:	immediately rinse eyes with water. In case of irritation, contact a physician.
Skin contact:	if molten material comes into contact with the skin, cool immediately with cold water. Removal of solidified molten material from skin as well as treatment of burns require medical assistance.
Ingestion:	remove material residues from mouth and rinse mouth with water. Drink plenty of water. Do NOT induce vomiting. In case of discomfort, contact a physician.
Inhalation:	provide fresh air. In case of noticing worrying symptoms, consult a physician.

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

Most important symptoms/effect: no data available

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

Notes to physician: treat symptomatically

## SECTION 5. FIREFIGHTING MEASURES

### 5.1. EXTINGUISHING MEDIA

Suitable extinguishing media:	fine spray or water mist, dry powder, foam, carbon dioxide (CO <sub>2</sub> ).
Unsuitable extinguishing media:	high volume water jet.

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

Special hazards arising from the substance or mixture: burning produces irritating and noxious fumes/gases, smoke, carbon monoxide, carbon dioxide, aldehyde.

### 5.3. ADVICE FOR FIREFIGHTERS

Special protective equipment for firefighters: self-contained breathing apparatus and full firefighting protective gear.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### 6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Use personal protective equipment. Avoid contact with eyes and skin. Do not breathe vapors. In case of failure in a confined space, ensure proper ventilation. Remove sources of ignition and extinguish open flame.

### 6.2. ENVIRONMENTAL PRECAUTIONS

Prevent or limit further leakage if possible. Avoid discharge of the product into drain, ground and surface water.

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

Sweep up and gather solidified material into appropriate containers for disposal. Collected material treat as waste.

### 6.4. REFERENCE TO OTHER SECTIONS

See SECTION 8 for personal protection information. See SECTION 13 for disposal considerations.

## SECTION 7. HANDLING AND STORAGE

### 7.1. PRECAUTIONS FOR SAFE HANDLING

Handle in accordance with general safety regulations. Use personal protective equipment. Ensure proper ventilation. Avoid contact with molten material. Do not eat, drink or smoke when using the product. Do not ingest.

### 7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in tightly closed packaging in a dry and cool room away from hot surfaces and sources of ignition. Protect from moisture and direct sunlight.

### 7.3. SPECIFIC END USE(S)

See SECTION 1.2.

Exposure scenario: no data available

Other guidelines: no data available

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. CONTROL PARAMETERS

Exposure limits:	the product does not contain any hazardous substances with occupational exposure limits.
Biological limit values:	not applicable
Recommended monitoring procedures:	not applicable
Derived No Effect Level (DNEL):	not applicable
Predicated No Effect Concentration (PNEC):	not applicable

### 8.2. EXPOSURE CONTROLS

Appropriate engineering controls:	store at temperatures between 20 and 30°C. Ensure proper ventilation, especially in confined spaces.
Individual protection measures, such as personal protective equipment:	
Eye protection:	wear safety glasses with side-shields.
Skin protection:	wear heat-resistant gloves when handling molten material.
Respiratory protection:	when working in spaces with high temperatures and with poor ventilation, use breathing equipment with particle filter.
Thermal hazards:	no fire hazard under normal use conditions.
Environmental exposure controls:	do not allow to enter drains, ground and surface water.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	filament
Physical state:	solid (compressed)
Colors:	various
Odor:	sweet
Melting point/freezing point:	150 - 180° C
Initial boiling point and boiling range:	no data available
Flammability:	no data available
Upper/lower flammability or explosive limits:	no data available
Flash point:	no data available
Auto-ignition temperature:	388° C
Decomposition temperature:	250° C
pH:	no data available
Solubility:	insoluble
Partition coefficient: n-octanol/water:	no data available
Vapor pressure:	no data available
Relative density:	1,30 g/cm <sup>3</sup>

Vapor density:	no data available
Particle size:	no data available
Particle size distribution:	no data available

## 9.2. OTHER INFORMATION

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## SECTION 10. STABILITY AND REACTIVITY

### 10.1. REACTIVITY

No reactivity under normal storage conditions.

### 10.2. CHEMICAL STABILITY

Stable under normal storage conditions.

### 10.3. POSSIBILITY OF HAZARDOUS REACTIONS

None under normal storage and processing.

### 10.4. CONDITIONS TO AVOID

Sources of heat, ignition and moisture. Working in spaces with poor ventilation.

### 10.5. INCOMPATIBLE MATERIALS

Strong oxidants

### 10.6. HAZARDOUS DECOMPOSITION PRODUCTS

No decomposition under normal conditions. Combustion products: see SECTION 5.2.

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1. INFORMATION ON HAZARD CLASSES AS DEFINED IN REGULATION (EC) NO 1272/2008

Acute toxicity:	shows no toxic effects
Skin corrosion/irritation:	contact with skin may cause irritation.
Serious eye damage/irritation:	contact with eyes may cause irritation.
Respiratory or skin sensitization:	no data available
Germ cell mutagenicity:	shows no mutagenic effects
Carcinogenicity:	IARC (International Agency for Research on Cancer) - none of the ingredients is listed. NTP (National Toxicology Program) - none of the ingredients is listed. OSHA (Occupational Safety and Health Administration) - none of the ingredients is listed.

Reproductive toxicity:	no data available
STOT-single exposure:	no data available
STOT-repeated exposure:	no data available
Aspiration hazard:	no data available

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1. TOXICITY

EC50/72h/algae > 1100 mg/L

### 12.2. PERSISTENCE AND DEGRADABILITY

Biodegradable under industrial composting conditions.

### 12.3. BIOACCUMULATIVE POTENTIAL

Bioaccumulation is not expected.

### 12.4. MOBILITY IN SOIL

No data available

### 12.5. RESULTS OF PBT AND VPVB ASSESSMENT

The product does not meet the criteria for PBT or vPvB classification.

### 12.6. ENDOCRINE DISRUPTING PROPERTIES

No data available

### 12.7. OTHER ADVERSE EFFECTS

See SECTION 6.2.

## SECTION 13. DISPOSAL CONSIDERATIONS

### 13.1. WASTE TREATMENT METHODS

Do not discard into drains, water courses or onto the ground. Waste and empty containers should be disposed of in accordance with local regulations.

## SECTION 14. TRANSPORT INFORMATION

### 14.1. UN NUMBER OR ID 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

DOT, ADR, IMDG, IATA – not applicable

## 14.6. SPECIAL PRECAUTIONS FOR USER

DOT, ADR, IMDG, IATA – not applicable

## 14.7. MARITIME TRANSPORT IN BULK ACCORDING TO IMO INSTRUMENTS

Not applicable

# SECTION 15. REGULATORY INFORMATION

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

U.S. REGULATIONS:

Sara 313 title III - not listed,

TSCA Inventory List – listed,

INTERNATIONAL INVENTORIES:

Canada DSL Inventory List - listed,

REACH/EU EINECS List - components are in compliance with and/or are listed,

Japan (ECL) - listed,

Australia (AICS) - listed,

Korean chemical inventory - listed,

Phillipines (PICCS) inventory - listed,

China inventory of existing chemical substances list - listed.

## 15.2. CHEMICAL SAFETY ASSESSMENT

A chemical safety assessment for the product has not been carried out.

## SECTION 16. OTHER INFORMATION

This Safety Data Sheet has been prepared on the basis of the currently available data on the product as well as of the Manufacturer's experience and knowledge. It should be treated as a guide for safe transportation, storage and handling. The given information is not to be considered as a warranty or quality specification. Additionally, it is the user's responsibility to handle the product in accordance with local regulations and standards.

End of Safety Data Sheet

The logo for Zortrax, featuring the word "zortrax" in a bold, lowercase, sans-serif font.

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