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Safety data sheet: Z-SUPPORT HIGH-TEMP

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

1.1. PRODUCT IDENTIFIER

Trade name: Z-SUPPORT HIGH-TEMP

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 34
10-409 Olsztyn
Poland
TEL. +48 89 672 40 01

Made in: USA

1.4. EMERGENCY TELEPHONE NUMBER

Emergency telephone number: 112

SECTION 2. HAZARDS IDENTIFICATION

The additives in this product (if any) are bound in a thermoplastic resin matrix. In accordance with GHS for the classification of the product, the hazard potential may be assessed with respect to the physico-chemical form and/or bioavailability of the individual components in the thermoplastic resin.
Where GHS classifications are shown below, these are based on the individual components in the thermoplastic resin matrix. Under the typical use conditions for the resin, these hazardous components are unlikely to contribute to workplace exposure. Please read the entire safety data sheet and/or consult an EHS professional for a complete understanding.

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

OSHA Regulatory Status
This product is an article, and is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

2.2. LABEL ELEMENTS

Not classified

Appearance:	Filament
Physical State:	Solid
Odor:	None or slight
Hazards not otherwise classified (HNOC)	Not applicable
Other Information	Not applicable

2.3. OTHER HAZARDS

Emergency Overview:

- Plastic filament

- Can burn in a fire creating dense, toxic smoke

- Molten plastic can cause severe thermal burns

- Fumes produced during melt processing may cause eye, skin, and respiratory tract irritation. Severe over-exposure may result in nausea, headache, chills, and fever. See below for additional effects.

- Secondary operations, such as grinding, sanding, or sawing can produce dust which may present an explosion or respiratory hazard.

Other information:

OSHA, IARC and/or NTP have listed carbon, titanium dioxide, crystalline silica (quartz), respirable glass and certain heavy metals, present in some colorants and fillers, as carcinogens. If these materials are present in this product at significant quantities, they are shown in Section 2/3. These materials are essentially bound to the plastic matrix and are unlikely to contribute to workplace exposure under recommended processing conditions.

Processing Issues:

Processing vapors may cause irritation to the eyes, skin, and respiratory tract. In cases of severe exposure, nausea and headache can also occur. Grease-like processing vapor condensates on ventilation ductwork, molds, and other surfaces can cause irritation and injury to skin.

Aggravated Medical Conditions:

MEDICAL RESTRICTIONS: There are no known health effects aggravated by exposure to this product. However, certain sensitive individuals and individuals with respiratory impairments may be affected by exposure to components in the processing vapors.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. SUBSTANCES

Not applicable

3.2. MIXTURES

Product Type	Article

The non-hazardous components and exact percentage (concentration) of the composition have been withheld as a trade secret.

This product consists primarily of high molecular weight polymers which are not expected to be hazardous.

SECTION 4. FIRST AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

If Inhalation:	Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. If symptoms persist, call a physician.
On skin contact:	For hot product, immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.
On contact with eyes:	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If eye irritation persists, consult a specialist.
On ingestion:	No hazards which require special first aid measures.
Precautions:	Processing vapors inhalation may be irritating to the respiratory tract. If symptoms are experienced remove victim from the source of contamination or move victim to fresh air and obtain medical advice.

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

Autoignition Temperature:	Not applicable
Explosive Limits	upper: Not applicable lower: Not applicable
Hazards from Combustion Products:	Fire will produce dense black smoke containing hazardous combustion products, carbon oxides, hydrocarbon fragments.

5.1. EXTINGUISHING MEDIA

Suitable extinguishing media:	Use dry chemical, CO2, water spray or „alcohol" foam. Water is the best extinguishing medium. Carbon dioxide and dry chemical are not generally recommended because their lack of cooling capacity may permit re-ignition on larger resin fires (blobs, drools, etc.).
Unsuitable Extinguishing Media for Safety Reasons:	Do not use a solid water stream as it may scatter and spread fire.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Specific Hazards:	Take precautionary measures against static discharges. Thermal decomposition can lead to release of irritating gases and vapors. Dust formed by operations such as cutting or grinding may form an explosive mixture in air.

5.3. ADVICE FOR FIREFIGHTERS

Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

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6.2. ENVIRONMENTAL PRECAUTIONS

Dispose of in compliance with all Federal, state and local laws and regulations.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Gather and store in a closed container pending a recyclability or waste disposal evaluation.

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 good industrial hygiene and safety practices. Provide for appropriate exhaust ventilation and dust collection at machinery. Avoid dust formation. Accumulation of waste films, sheets and/or masking may create a slipping hazard.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep away from heat sources and sources of ignition.

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

Engineering Measures to Reduce Exposure:	Handle in accordance with good industrial hygiene and safety practices. Processing fume condensate may be a fire hazard and toxic; remove periodically from exhaust hoods, ductwork, and other surfaces using appropriate personal protection.

8.2. EXPOSURE CONTROLS

Individual protection measures, such as personal protective equipment:

Hand Protection:	Protective gloves should be worn.
Eye Protection:	Safety glasses.
Respiratory protection:	When using this product at elevated temperatures, implement engineering systems, administrative controls or a respiratory protection program (including a respirator approved for protection from organic vapors, acid, gases, and particulate matter) if processing vapors are not adequately controlled or operators experience symptoms of overexposure. If dust or powder are produced from secondary operations such as sawing or grinding, use a respirator approved for protection from dust.
Body Protection:	Long sleeved clothing.
Hygiene Measures:	When using, do not eat, drink or smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	filament
Physical state:	solid (compressed)
Color:	natural
Odor:	none or slight
Odor threshold:	not applicable
pH:	no data available
Melting point/freezing point:	This product does not exhibit a sharp melting point but softens gradually over a wide range of temperatures.
Initial boiling point and boiling range:	no data available
Flash point:	no data available
Evaporation rate:	no data available
Flammability:	no data available
Upper/lower flammability or explosive limits:	no data available
Vapor pressure:	no data available
Vapor density:	no data available
Relative density:	no data available

Solubility:	no data available
Partition coefficient: n-octanol/water:	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
Viscosity:	no data available
Explosive properties:	no data available
Oxidizing properties:	no data available

9.2. OTHER INFORMATION

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SECTION 10. STABILITY AND REACTIVITY

10.1. REACTIVITY

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10.2. CHEMICAL STABILITY

Stable.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS

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10.4. CONDITIONS TO AVOID

Do not exceed maximum temperatures recommended in the product literature.

10.5. INCOMPATIBLE MATERIALS

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10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Process vapors under recommended processing conditions may include trace levels of hydrocarbons, phenols, alkyl-phenols, diarylcarbonates.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

Acute Toxicity:

Other information on acute toxicity:	There are no toxicological hazards associated with this product.

Chronic Toxicity:	There are no toxicological hazards associated with this product.
Special Studies:	No Information.

SECTION 12. ECOLOGICAL INFORMATION

12.1. TOXICITY

No data available

12.2. PERSISTENCE AND DEGRADABILITY

No data available

12.3. BIOACCUMULATIVE POTENTIAL

No data available

12.4. MOBILITY IN SOIL

No data available

12.5. RESULTS OF PBT AND VPVB ASSESSMENT

No data available

12.6. OTHER ADVERSE EFFECTS

See SECTION 6.2.

Other information:	Not expected to end up in the environment under conditions of intended use and appropriate disposal or recycling.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. WASTE TREATMENT METHODS

Recycling is encouraged. Landfill or incinerate in accordance with federal, state and local requirements. Collected processing fume condensates and incinerator ash should be tested to determine waste classification.

SECTION 14. TRANSPORT INFORMATION

Transport Classification:	Not regulated as hazardous for shipment, unless noted below, under current transportation guidelines.

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

DOT, ADR, IMDG, IATA – not applicable

14.6. SPECIAL PRECAUTIONS FOR USER

DOT, ADR, IMDG, IATA – not applicable

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

International Inventories:	Film, sheet and filament products are articles, exempt from registration or notification in those countries that have national chemical inventories.
CERCLA/SARA 311/312/313:	This product is a non-hazardous article and therefore not subject to the requirements of Title III of SARA (Emergency Planning and Community Right-To-Know Act).
Canada:	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.
WHMIS hazard class:	Non-controlled, article

RoHS EU Directive 2011/65/EU:	This product is in compliance with the EU RoHS Directive 2002/95/EC. The following are not intentionally added during the manufacture of this product: a - cadmium and its compounds, b - lead and its compounds, c - mercury and its compounds, d - hexavalent chromium compounds, e - polybrominated biphenyls (PBBs), f - polybrominated diphenyl ethers (PBDEs, including Deca-BDE).

HMIS Rating

Health: 0

Flammability: 1

Reactivity: 0

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

zortrax

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