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Safety data sheet: Z-FLEX

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

1.1. PRODUCT IDENTIFIER

Trade name: Z-FLEX

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: EU

1.4. EMERGENCY TELEPHONE NUMBER

Emergency telephone number: 112

SECTION 2. HAZARDS IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

According to Regulation (WE) No 1272/2008 [CLP]: No need for classification according to GHS criteria for this product.

2.2. LABEL ELEMENTS

According to Regulation (WE) No 1272/2008 [CLP]: The product does not require a hazard warning label in accordance with GHS criteria.

2.3. OTHER HAZARDS

Contact with hot product can cause severe burns. Inhalation: At high temperatures, thermal decomposition products may be irritating to the respiratory system. Skin contact: Danger of skin sensitization. At high temperatures, thermal decomposition products may be irritating to the skin. Eye contact: At high temperatures, thermal decomposition products may be irritating to the eyes.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. SUBSTANCES

Not applicable

3.2. MIXTURES

Butylene / poly(alkylene ether) phthalate - CAS NUMBER: 9086-55-9

SECTION 4. FIRST AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

Eye contact:	In case of contact, immediately flush eyes with copious amount of water for at least 15 minutes. Call a physician.
Skin contact:	The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable. If molten polymer gets on skin, cool rapidly with cold water. Do not attempt to peel polymer from skin. Obtain medical treatment for thermal burns.
Ingestion:	No specific intervention is indicated as the compound is not likely to be hazardous by ingestion. Consult a physician if necessary.
Inhalation:	No specific intervention is indicated as the compound is not likely to be hazardous by inhalation. Consult a physician if necessary. If exposed to fumes from overheating or combustion, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, supply oxygen.

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

Symptoms:	No significant reaction of the human body to the product known.
Hazards:	Risk of skin burns caused by hot melt at improper processing. Apart from that no hazard is expected under intended use and appropriate handling.

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

Continuation of first aid measures. Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5. FIREFIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

Suitable extinguishing media: Water, foam, dry chemical, CO₂

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Combustible hazardous gases / vapors produced in fire are carbon monoxide.

5.3. ADVICE FOR FIREFIGHTERS

Special methods: Wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Small pieces of filament on floor may be slippery and cause falls.

6.2. ENVIRONMENTAL PRECAUTIONS

Spilled pellets may cause soil and air pollution. Disposal should be carried in compliance with federal, state and local regulations regarding health, air and water pollution.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Recover large spills for disposal. Carefully sweep up small spills and transfer to suitable container for disposal. Avoid creation of dusty atmosphere. Do not sweep or flush into sewers or water ways.

6.4. REFERENCE TO OTHER SECTIONS

None

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 cool and ventilated dry place. Keep containers tightly closed to prevent moisture absorption and contamination. Do not expose to temperature exceeding 40° C [104° F] for a prolonged time. Protect from direct sunlight and all heat sources in order to avoid sintering.

7.3. SPECIFIC END USE(S)

For the relevant identified uses listed in section 1 the advice mentioned in this section is to be observed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. CONTROL PARAMETERS

VENTILATION. Local exhaust ventilation to draw fume, vapor and dust away from workers in both melt processing and cutting/grinding of polymer to prevent inhalation.

8.2. EXPOSURE CONTROLS

Personal protective equipment:

Skin protection:

Protective gloves, long sleeve cotton shirt and long pants when handling molten polymer.

Eye protection:

Safety glasses.

Respiratory protection:

Not required for normal processing. If dusts are generated, wear approved dust respirator.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	filament
Physical state:	solid (compressed)
Colors:	black
Odor:	odorless
Odor threshold:	not applicable
pH:	no data available
Melting point:	155° C to 222° C [311° F to 432° F]
Initial boiling point and boiling range:	no data available
Flash point:	no data available
Evaporation rate:	no data available
Flammability:	flammable in constant flame
Upper/lower flammability or explosive limits:	no data available
Vapor pressure:	negligible
Vapor density:	no data available
Relative density:	1.07 to 1.27 g/cm ³
Solubility:	insoluble
Partition coefficient: n-octanol/water:	no data available
Auto-ignition temperature:	product is not self-igniting
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

No reactions if stored and handled as prescribed/indicated.

10.2. CHEMICAL STABILITY

Stable at ordinary conditions.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS

The product is stable of stored and handled as prescribed/indicated.

10.4. CONDITIONS TO AVOID

Oxidizing (heating in air). Abnormally long processing time or high temperature can produce irritating and toxic fumes.

10.5. INCOMPATIBLE MATERIALS

Oxidizing agents.

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Acrolein, tetrahydrofuran, acetaldehyde.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

No exact toxicological data are available.

SECTION 12. ECOLOGICAL INFORMATION

12.1. TOXICITY

Butylene / poly(alkylene ether) phthalate.

The product is not harmful to the environment. As this product is a 100% active material, no evaporation or air pollution during handling under normal conditions can occur.

12.2. PERSISTENCE AND DEGRADABILITY

This water insoluble polymeric solid is expected to be essentially unreactive in the environment over a period of many years. Surface photodegradation is expected with exposure to sunlight. No appreciable biodegradation is expected.

12.3. BIOACCUMULATIVE POTENTIAL

No bioconcentration is expected because of high molecular weight (MW > 10000).

12.4. MOBILITY IN SOIL

In the terrestrial environment, material is expected to remain in soil.

12.5. RESULTS OF PBT AND VPvB ASSESSMENT

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

12.6. OTHER ADVERSE EFFECTS

See SECTION 6.2.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. WASTE TREATMENT METHODS

Unused polymer product and empty containers may be disposed under controlled incineration and in agreement with local and national legislation.

SECTION 14. TRANSPORT INFORMATION

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

None known.

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

Regulation:	not evaluated
Shipment approved:	not evaluated
Pollution name:	not evaluated
Pollution category:	not evaluated
Ship type:	not evaluated

SECTION 15. REGULATORY INFORMATION

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

This product contains no known toxic chemicals subjected to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

These materials are in compliance with TSCA Inventory requirements for commercial purposes.

15.2. CHEMICAL SAFETY ASSESSMENT

A safety data sheet for this product is legally not required and is provided by us just as a courtesy to our customers. Product is not classified as hazardous. Chemical safety assessment not required.

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



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