

Safety data sheet: Z-SUPPORT

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

1.1. PRODUCT IDENTIFIER

Trade name: Z-SUPPORT
Generic name: PVA
Material type: thermoplastic

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. HAZARD 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 HAZARD

The material contains less than 0.1% of the ingredient which may cause skin sensitization.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. SUBSTANCES

Not applicable

3.2. MIXTURES

Components	Concentration [%]	CAS-No.	Classification (1272/2008/EC)
Methanol	< 1	67-56-1 200-659-6	Flam. Liq. 2; H225 Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 STOT SE 1; H370

For the full text of the H-Statements mentioned in this SECTION, see SECTION 16.

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 (CO₂).

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: special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases: burning produces irritating and noxious fumes/gases, smoke, carbon monoxide, carbon dioxide.

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 PROTECTION

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

Components	CAS-No.	Control Parameters	Basis	Update
Methanol	67-56-1	TWA: 266 mg/m ³ , 200 ppm Sk STEL: 333 mg/m ³ , 250 ppm Sk	GB EH40	06-04-2005

Components	CAS-No.	Control Parameters	Basis	Update
Methanol	67-56-1	TWA: 260 mg/m ³ , 200 ppm skin	2006/15/EC	06-04-2005

Other information on limit values: see SECTION 16

8.2. EXPOSURE CONTROL

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: no data available

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	filament
Physical state:	solid (compressed)
Colors:	natural
Odor:	slight vinegar-like
Odor threshold:	not applicable
pH:	5.0 - 7.0
Melting point/freezing point:	150 - 230°C
Initial boiling point and boiling range:	no data available
Flash point:	520°C
Evaporation rate:	no data available

Flammability:	no data available
Upper/lower flammability or explosive limits:	35g/m ³
Vapor pressure:	no data available
Vapor density:	no data available
Relative density:	1,19 - 1.31 g/cm ³
Solubility:	soluble
Partition coefficient: n-octanol/water:	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	>= 200 °C
Viscosity:	no data available
Explosive properties:	no data available
Oxidizing properties:	no data available

9.2. OTHER INFORMATION

Miscibility:	immiscible
Fat solubility:	no data available
Conductivity:	no data available
Gas group:	no data available

SECTION 10. STABILITY AND REACTIVITY

10.1. REACTIVITY

No data available

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

No data available

10.5. INCOMPATIBLE MATERIALS

Oxidizing agents, acids and bases.

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

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

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

Acute toxicity Methanol:	Oral LD50 > 2000 mg / kg, Skin > 2000 mg / kg: Method: calculation method. Inhalation > 20mg / L: Test atmosphere: vapour, Exposure time: 4 h, Method: calculation method.
Skin corrosion/irritation Methanol:	Species: rabbit. No skin irritation.
Serious eye damage/irritation Methanol:	Species: rabbit. No eye irritation.
Respiratory or skin sensitization Methanol:	Test Method: maximisation. Species: guinea pig. Result: does not cause skin sensitisation. Method: OECD Test Guideline 406.
Germ cell mutagenicity:	no data available
Carcinogenicity:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity:	no data available
STOT-single exposure:	Causes damage to organs.
STOT-repeated exposure:	no data available
Aspiration hazard:	no data available

SECTION 12. ECOLOGICAL INFORMATION

12.1. TOXICITY

Toxicity to fish Methanol:	Oncorhynchus mykiss (rainbow trout): > 100 mg/L: Exposure time: 96 h.
Toxicity to daphnia and other aquatic invertebrates Methanol:	Daphnia magna (water flea): > 100 mg/L: Exposure time: 48 h.
Toxicity to algae Methanol:	Algae: > 100 mg/L.
Toxicity to bacteria Methanol:	IC50 : > 1000 mg/L: Exposure time: 3 h, Test method: respiration inhibition of activated sludge Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity)
methanol: NOEC: 7,900 mg/L,
Oryzias latipes (japanese killifish):
Exposure time: 200 h.

12.2. PERSISTENCE AND DEGRADABILITY

Methanol: Result: readily biodegradable.

12.3. BIOACCUMULATIVE POTENTIAL

Methanol: Cyprinus carpio (karp): 5mg/L
Bioconcentration factor (BCF): 1 - 4.5

12.4. MOBILITY AT SOIL

No data available

12.5. RESULTS OF PBT AND vPvB ASSESSMENT

No data available

12.6. OTHER ADVERSE EFFECTS

See SECTION 6.2.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. WASTE TREATMENT METHODS

Do not discard into water courses or onto the ground. When used as a support material for 3D printing, it can be disposed of through the drain. Waste and empty containers should be disposed of in accordance with local regulations.

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

DOT, ADR, IMDG, IATA – not applicable

14.7. TRANSPORT IN BULK 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

VOC: 0.5 %
VOC content less water: 6.55 g/L

Directive 96/82/EC - not applicable

15.2. CHEMICAL SAFETY ASSESSMENT

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

SECTION 16. OTHER INFORMATION

Full text of H-Statements referred to under SECTIONS 2 and 3.

H225 - Highly flammable liquid and vapour.

H301 - Toxic if swallowed.

H311 - Toxic in contact with skin.

H331 - Toxic if inhaled.

H370 - Causes damage to organs.

Flam. Liq. 2 - Flammable liquids, Hazard Category 2

Acute Tox. 3 - Acute toxicity, Hazard Category 3

STOT SE 1 - Specific target organ toxicity - Single exposure, Hazard Category 1

Other information

Sk - Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.

skin - Identifies the possibility of significant uptake through the skin.

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.

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