



## Safety Data Sheet

According to EU Directive 1907/2006

**Product name: Robox® SmartReel™ PVOH**

Date of issue: 17-04-2019

Version: 1.2

### 1. Identification of the substance/preparation and of the company

**1.1 Trade name:**

Robox® SmartReel™ PVOH

**1.2 Use of the product:**

3Dprinter Filament

**1.3 Supplier:**

C Enterprise (UK) Ltd.

Unit 3, Harbourmead, Harbour Road Trading Estate, Portishead,

North Somerset, BS20 7AY, United Kingdom

Phone: +44 (0)8453 889769

Emergency phone number: +44 (0)8453 889769

### 2. Hazards identification

#### 2.1 Classification of the substance or mixture classification (REGULATION (EC) No 1272/2008)

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

#### 2.2 Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Polyvinyl alcohol compound

Hazard pictograms None.

Signal word None.

Hazard statements The mixture does not meet the criteria for classification.

Precautionary statements

Prevention Use personal protective equipment as required.

Response No specific first aid measures noted.

Storage Store in a dry area. Store in a closed container.

Disposal Dispose of waste and residues in accordance with local authority requirements.

#### 2.3 Other hazards

Fine particles may form explosive mixtures with air. This material does not ignite easily; however, feasible precautions against dust explosion are recommended.



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### 3. Composition/information on ingredients

#### 3.2 Mixtures

##### Hazardous components

Chemical Name	CAS-No.	Classification (1272/2008/EC)	Concentration [%]
	EC-No.		
	Registration number		
Polyvinyl alcohol	N/A		>95%
Methanol (impurity)	67-56-1 200-659-6	Flam. Liq. 2;H225, Acute Tox. 3;H301, Acute Tox. 3;H311, Acute Tox. 3;H331, STOT SE 1;H370	<1%
Styrene	100-42-5 202-851-5	Flam. Liq. 3 /H226 Acute Tox. 4 /H332 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Repr. 2 / H361d	Trace <0,001%

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

### 4. First aid measures

#### 4.1 Description of first aid measures

General information:

If you feel unwell, seek medical advice (show the label where possible). Never give anything by mouth to an unconscious person. Take off contaminated clothing and shoes immediately.

After inhalation:

Provide fresh air. Put victim at rest and keep warm.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

In case of skin contact:

The melted product can cause severe burns.

Do not attempt to remove molten product, or molten product that has cooled, from skin without medical assistance.

After contact with molten product, cool skin area rapidly with cold water. Consult physician. Brush off loose particles from skin. Rinse skin with water/shower.

After eye contact:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Consult an eye specialist in the event of irritation.



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After swallowing:

Rinse mouth with water. Induce vomiting immediately and call a physician. If a person vomits when lying on his back, place him in the recovery position. Never give an unconscious person anything through the mouth. seek medical attention

#### 4.2 Most important symptoms and effects, both acute and delayed

no data available

#### 4.3 Indication of any immediate medical attention and special treatment needed

no data available

### 5. Fire fighting measures

#### 5.1 Extinguishing media

Suitable extinguishing media:

Water spray, Foam, Dry powder, Carbon dioxide (CO<sub>2</sub>).

Unsuitable extinguishing media :

Do not use a solid water stream as it may scatter and spread fire.

#### 5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated: hydrogen cyanide, carbon monoxide and carbon dioxide (CO<sub>2</sub>). In case of dust (Fine dust): danger of dust explosion

#### 5.3 Advice for fire fighters

Fire fighting measures

Wear a self-contained breathing apparatus and chemical protective clothing.

Unusual Fire Hazards:

Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. In the event of fire and/or explosion do not breathe fumes.

### 6. Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation.

Wear personal protection equipment. Do not breathe dust.

#### 6.2 Environmental precautions

Do not allow materials to penetrate into soil, waterbodies or untreated drains.

Diluted liquid material can be poured into most sewer systems. Check with local waste water service and avoid solids entering drains. Use warm or hot water to ensure material is diluted.

Undiluted waste should be disposed of with absorbent waste materials as a solid.

#### 6.3 Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk.

Large Spills:

Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.



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### Small Spills:

Sweep up or vacuum up spillage and collect in suitable container for disposal.

### Additional information:

Special danger of slipping by leaking/spilling product.

### 6.4 Reference to other sections

Refer to section (8)

## 7. Handling and storage

### 7.1 Handling

Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Store in a well-ventilated place. Keep container tightly closed.

Protect against heat /sun rays. Protect from moisture contamination.

Storage class:

11 = Combustible solids

Advice on common storage:

Keep away from oxidising agents and strongly acid or

alkaline materials. Keep away from food, drink and animal feedingstuffs.

Storage temperature:

$\leq 40$  °C

Other data:

No decomposition if stored and applied as directed



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### 8. Exposure controls/personal protection

#### 8.1 Control parameters

Occupational exposure limit values:

CAS no.	Designation	Type	Limitvalue
67-56-1	Methanol	2006/15/EC	TWA: 266 mg/m <sup>3</sup> , 200 ppm Sk, STEL: 333 mg/m <sup>3</sup> , 250 ppm Sk,
100-42-5	Styrene	Great Britain: WEL-STEL Great Britain: WEL-TWA Ireland: 15 minutes Ireland: 8 hours	1.080mg/m <sup>3</sup> ; 250 ppm 430 mg/m <sup>3</sup> ; 100 ppm 170 mg/m <sup>3</sup> ; 40 ppm 85 mg/m <sup>3</sup> ; 20 ppm
-	Dust	TWA	4 mg/m <sup>3</sup> Respirable dust. 10 mg/m <sup>3</sup> Inhalable dust.

#### Biological limit values

No biological exposure limits noted for the ingredient(s).

#### Recommended monitoring

Follow standard monitoring procedures.

#### Derived no-effect level (DNEL)

Not available.

#### Predicted no effect concentrations (PNECs)

Not available.

#### 8.2 Exposure controls

Provide good ventilation and/or an exhaust system in the work area

#### Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn.

#### Respiratory protection:

In the case of dust or aerosol formation use respirator with an approved filter. Half mask with a particle filter P2 (EN 143).

#### Hand protection:

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

#### Eye protection:

Wear safety glasses with side shields (or goggles).



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### Body protection:

Wear suitable protective clothing.

### General protection and hygiene measures:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants

### Environmental exposure controls

Environmental manager must be informed of all major releases..

## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance	Solid Filament
Odour	Odourless to mild
Colour	depending on product grade
Odour threshold	No information available
pH	Not applicable
Melting/freezing point	> 200 °C (DIN EN ISO 306)
Initial boiling point and boiling range	Not applicable
Flash point	> 400 °C
Evaporation rate	Not applicable
Flammability (solid, gas)	No information available
Upper/lower flammability or explosive limits	UEL: No data available LEL: No data available
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	at 20 °C: approx. 1,04 g/cm <sup>3</sup> (DIN 53479)
Solubility(ies)	Negligible
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	not self-igniting
Decomposition temperature	approx. 300 °C
Viscosity	Not applicable
Explosive properties	Dust explosion risk at fine dust
Oxidizing properties	Oxidising potential: not oxidising

### 9.2 Other Information

Ignition temperature: > 400 °C (DIN 51794)

## 10. Stability

### 10.1 Reactivity:

The product is stable and non-reactive under normal conditions of use, storage and transport.

### 10.2 Chemical stability:

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions:

In case of dust (Fine dust): danger of dust explosion



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### 10.4 Conditions to avoid:

Avoid elevated temperatures for prolonged periods of time.

### 10.5 Incompatible materials:

Strong oxidising agents. Strong acids.

### 10.6 Hazardous decomposition products

In case of fire may be liberated: Carbon oxides.

Thermal decomposition: approx. 300 °C

Material becomes insoluble after overheating

## 11. Toxicological information

### 11.1 Information on toxicological effects

Toxicological effects:

Methanol (impurity) (CAS 67-56-1)

Acute toxicity (oral): LD50 Rat 1187 - 2769 mg/kg

Acute toxicity (dermal): LD50 Rabbit 17100 mg/kg

Acute toxicity (inhalative): LC50 Rat 128200 mg/m<sup>3</sup>, 4 Hours

Skin corrosion/irritation: Lack of data. May cause irritations.

Eye damage/irritation: Lack of data. May cause irritations.

Sensitisation to the respiratory tract:

Not a respiratory sensitiser.

Skin sensitisation:

Lack of data. Not to be expected

Germ cell mutagenicity/Genotoxicity:

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity: Not classifiable as to carcinogenicity to humans

Reproductive toxicity: Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure):

Lack of data.

Dusts:

Possible Irritating to eyes, respiratory system and skin.

Specific target organ toxicity (repeated exposure):

Lack of data.

Aspiration hazard:

Not an aspiration hazard.

Other information:

Not available



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### 12. Ecological information

#### 12.1 Toxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components:

Methanol (impurity) (CAS 67-56-1)

		Species	Results
Algae	EC50	Algae	22000 mg/l, 96 hours
Crustacea	EC50	Daphnia Magna	> 10000 mg/l, 48 hours
Fish	LC50	Lepomis Macrochirus	15400 mg/l, 96 hours

#### 12.2. Persistence and degradability

No data is available on the degradability of this product.

#### 12.3 Bioaccumulative potential

No data available.

#### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

#### 12.6 Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

#### 13.1 Waste treatment methods

Residual waste

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

EU waste code

07 02 13

Waste codes should be assigned by the user based on the application for which the product was used.





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#### Disposal methods/information

Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

#### Special precautions

Dispose in accordance with all applicable regulations.

### 14. Transport information

Product has been classified as being non-dangerous substance according to transport regulations ADR, RID, IMDG, IATA/ICAO

#### 14.1 UN number

Not applicable

#### 14.2 UN proper shipping name

Not applicable

#### 14.3 Transport hazard class(es)

Not applicable

#### 14.4 Packing Group

Not applicable

#### 14.5 Environmental hazards

No additional data is available

#### 14.6 Special precautions for user

No data available

#### 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not evaluated

### 15. Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 96/82/EC: Update: 2003  
Directive 96/82/EC does not apply

Further information: Reserved for industrial and professional use.

#### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out.

### 16. Other information

*Information is referenced from other manufacturers.*

*For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).*

*This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 and Regulation (EC) No. 2015/830. Label element according to Regulation (EC) No 1272/2008.*



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*The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.*