

# Safety data sheet

## Bedrock 3D PPSU

Page: 1/11

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Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
Date / Revised 31-10-2025 || Date of print 31-10-2025 || Version: 1.0  
(ID no. 31102025\_136/SDS/EN)

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### 1. Identification

#### Product identifier

## Bedrock 3D PPSU

Chemical name: Ultrafuse® PPSU

Recommended use: 3D Printing

Company:

Forward AM Technologies Netherlands B.V.  
Eerste Bokslootweg 17  
7821 AT EMMEN - Netherlands

Email: [customersupport@bedrock3d.com](mailto:customersupport@bedrock3d.com)

Emergency email address: [customersupport@bedrock3d.com](mailto:customersupport@bedrock3d.com)

international emergency number:  
Telephone: +49 180 2273-112

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### 2. Hazards Identification

#### Classification of the substance or mixture

According to UN GHS criteria

No need for classification according to GHS criteria for this product.

#### Label elements

Globally Harmonized System (GHS)

Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
Date / Revised 31-10-2025 || Date of print 31-10-2025 || Version: 1.0  
(ID no. 31102025\_136/SDS/EN)

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The product does not require a hazard warning label in accordance with GHS criteria.

### **Other hazards**

#### According to UN GHS criteria

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

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## **3. Composition/Information on Ingredients**

### **Substances**

#### Chemical nature

Polymer based on:

[1,1'-Biphenyl]-4,4'-diol, polymer with 1,1'-sulfonylbis[4-chlorobenzene]  
CAS Number: 25608-64-4

### **Mixtures**

Not applicable

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## **4. First-Aid Measures**

### **Description of first aid measures**

Remove contaminated clothing.

If inhaled:

Remove the affected individual into fresh air and keep the person calm. If symptoms persist, seek medical advice.

On skin contact:

Wash thoroughly with soap and water. If irritation develops, seek medical attention. Burns caused by molten material require hospital treatment.

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open. If irritation develops, seek medical attention.

On ingestion:

Rinse mouth immediately with water. Immediate medical attention required.

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

Symptoms: (Further) symptoms and / or effects are not known so far

Hazards: No hazard is expected under intended use and appropriate handling.

Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
Date / Revised 31-10-2025 || Date of print 31-10-2025 || Version: 1.0  
(ID no. 31102025\_136/SDS/EN)

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**Indication of any immediate medical attention and special treatment needed**

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

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**5. Fire-Fighting Measures****Extinguishing media**

Suitable extinguishing media:

| water spray, foam, dry powder, carbon dioxide

**Special hazards arising from the substance or mixture**

carbon oxides

The substances/groups of substances mentioned can be released in case of fire.

**Advice for fire-fighters**

Special protective equipment:

Wear a self-contained breathing apparatus.

Further information:

| Dust can form an explosive mixture with air. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

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**6. Accidental Release Measures**

| Avoid dispersal of dust in the air (e.g. by clearing dusty surfaces with compressed air). Avoid the formation and build-up of dust - danger of dust explosion. Dust in sufficient concentration can result in an explosive mixture in air. Handle to minimize dusting and eliminate open flame and other sources of ignition.

**Personal precautions, protective equipment and emergency procedures**

No special precautions necessary.

**Environmental precautions**

Discharge into the environment must be avoided.

**Methods and material for containment and cleaning up**

For small amounts: Sweep/shovel up.

For large amounts: Sweep/shovel up.

| Dispose of absorbed material in accordance with regulations. Avoid raising dust.

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**7. Handling and Storage****Precautions for safe handling**

Avoid inhalation of dusts/mists/vapours. Ensure adequate ventilation. Provide suitable exhaust ventilation at the drying process and in the area surrounding the melt outlet of processing machines. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Avoid the formation and deposition of dust.

Protection against fire and explosion:

Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
Date / Revised 31-10-2025 || Date of print 31-10-2025 || Version: 1.0  
(ID no. 31102025\_136/SDS/EN)

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The product is not an oxidizer, not self-combustible and not explosive. Avoid dust formation. Dust in sufficient concentration can result in an explosive mixture in air. Handle to minimize dusting and eliminate open flame and other sources of ignition.

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

Further information on storage conditions: Frost sensitive Avoid deposition of dust. Keep away from heat.

Storage stability:  
Protect against moisture.

#### **Specific end use(s)**

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

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## **8. Exposure Controls/Personal Protection**

### **Control parameters**

#### Components with occupational exposure limits

| No substance specific occupational exposure limits known.

### **Exposure controls**

#### Personal protective equipment

Respiratory protection:

Breathing protection if breathable aerosols/dust are formed. Wear respiratory protection if ventilation is inadequate. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

Hand protection:

Use additional heat protection gloves when handling hot molten masses (EN 407), e.g. of textile or leather.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

#### General safety and hygiene measures

| Wear protective clothing to prevent contact during mechanical processing and/or hot melt conditions. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. When using, do not eat, drink or smoke.

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## **9. Physical and Chemical Properties**

### **Information on basic physical and chemical properties**

Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
 Date / Revised 31-10-2025 || Date of print 31-10-2025 || Version: 1.0  
 (ID no. 31102025\_136/SDS/EN)

Form:	filament
Colour:	Transparent yellow
Odour:	odourless
Odour threshold:	not determined
pH value:	not soluble
glass transition temperature:	220 °C (1.013 hPa)
Boiling range:	(1.013 hPa) The substance / product decomposes therefore not determined.
Flash point:	not applicable, the product is a solid
Evaporation rate:	The product is a non-volatile solid.
Flammability:	Not a flammable solid according to UN transport regulations division 4.1 and GHS chapter 2.7.
Lower explosion limit:	For solids not relevant for classification and labelling.
Upper explosion limit:	For solids not relevant for classification and labelling.
Ignition temperature:	not applicable
Vapour pressure:	not applicable
Relative density:	No data available.
Relative vapour density (air):	The product is a non-volatile solid.
Solubility in water:	not soluble
Solubility (quantitative) :	insoluble
Partitioning coefficient n-octanol/water (log Kow):	Study does not need to be conducted.
Self ignition:	not self-igniting
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated. Prolonged thermal loading can result in products of degradation being given off.
Viscosity, dynamic:	Study does not need to be conducted.
Explosion hazard:	not explosive
Fire promoting properties:	not fire-propagating

**Other information**

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Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
Date / Revised 31-10-2025 || Date of print 31-10-2025 || Version: 1.0  
(ID no. 31102025\_136/SDS/EN)

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Self heating ability: It is not a substance capable of spontaneous heating.

Hygroscopy: Non-hygroscopic  
Grain size distribution: No data available.

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## 10. Stability and Reactivity

### Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

### Chemical stability

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

### Possibility of hazardous reactions

No hazardous reactions when stored and handled according to instructions.

### Conditions to avoid

Avoid electro-static charge. Avoid dust formation. Avoid deposition of dust.

### Incompatible materials

Substances to avoid:

No substances known that should be avoided.

### Hazardous decomposition products

Hazardous decomposition products:

Prolonged thermal loading can result in products of degradation being given off., monomers, gases/vapours, oxides, hydrocarbons, cyclic low molecular weight oligomers

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## 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

Assessment of acute toxicity:

Contact with molten product may cause thermal burns.

Experimental/calculated data:

LD50 rat (oral): > 2.000 mg/kg

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

LC50 (by inhalation):

not determined

LD50 (dermal):

not determined

#### Irritation

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Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
Date / Revised 31-10-2025 || Date of print 31-10-2025 || Version: 1.0  
(ID no. 31102025\_136/SDS/EN)

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Assessment of irritating effects:

No irritation is expected under intended use and appropriate handling.

Experimental/calculated data:

Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Respiratory/Skin sensitization

Assessment of sensitization:

The substance is inert.

The chemical structure does not suggest a sensitizing effect.

Germ cell mutagenicity

Assessment of mutagenicity:

The substance is inert.

No data was available concerning mutagenic activity. The chemical structure does not suggest a specific alert for such an effect.

Carcinogenicity

Assessment of carcinogenicity:

The substance is inert.

No data was available concerning carcinogenic activity. The chemical structure does not suggest a specific alert for such an effect.

Reproductive toxicity

Assessment of reproduction toxicity:

The substance is inert.

The chemical structure does not suggest a specific alert for such an effect.

Developmental toxicity

Assessment of teratogenicity:

The substance is inert.

No data was available concerning toxicity to development. The chemical structure does not suggest a specific alert for such an effect.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
Date / Revised 31-10-2025 || Date of print 31-10-2025 || Version: 1.0  
(ID no. 31102025\_136/SDS/EN)

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Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Remarks: The product has not been tested. The statement has been derived from the structure of the product.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:  
The substance is inert.

Aspiration hazard

No aspiration hazard expected.

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## 12. Ecological Information

### Toxicity

Assessment of aquatic toxicity:  
There is a high probability that the product is not acutely harmful to aquatic organisms.

Toxicity to fish:  
LC50 (96 h) > 100 mg/l, Fish  
The product has not been tested. The statement has been derived from the structure of the product.

Aquatic invertebrates:  
LC50 (48 h), daphnia  
not determined

Aquatic plants:  
EC50 (72 h), algae  
not determined

Microorganisms/Effect on activated sludge:  
EC50 (0,5 h), bacteria  
not determined

Chronic toxicity to fish:  
No data available.

Chronic toxicity to aquatic invertebrates:  
No data available.

Assessment of terrestrial toxicity:  
No data available concerning terrestrial toxicity.

### Persistence and degradability

Assessment biodegradation and elimination (H<sub>2</sub>O):  
Experience shows this product to be inert and non-degradable.

### Bioaccumulative potential

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Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
Date / Revised 31-10-2025 || Date of print 31-10-2025 || Version: 1.0  
(ID no. 31102025\_136/SDS/EN)

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Assessment bioaccumulation potential:  
Discharge into the environment must be avoided.

Bioaccumulation potential:  
The product will not be readily bioavailable due to its consistency and insolubility in water.

### **Mobility in soil**

Assessment transport between environmental compartments:  
Adsorption in soil: Study scientifically not justified.

### **Additional information**

Add. remarks environm. fate & pathway:  
Due to the consistency of the product, dispersion into the environment is impossible. Therefore no negative effects on the environment may be anticipated based on the present state of knowledge.

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## **13. Disposal Considerations**

### **Waste treatment methods**

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:  
Uncontaminated packaging can be re-used.  
Packs that cannot be cleaned should be disposed of in the same manner as the contents.

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## **14. Transport Information**

### **Land transport**

ADR

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

RID

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for	None known

Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
Date / Revised 31-10-2025 || Date of print 31-10-2025 || Version: 1.0  
(ID no. 31102025\_136/SDS/EN)

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user

**Inland waterway transport**

ADN

Not classified as a dangerous good under transport regulations

UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

**Transport in inland waterway vessel**

Not evaluated

**Sea transport**

IMDG

Not classified as a dangerous good under transport regulations

UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

**Air transport**

IATA/ICAO

Not classified as a dangerous good under transport regulations

UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

**Maritime transport in bulk according to IMO instruments**

Maritime transport in bulk is not intended.

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Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
Date / Revised 31-10-2025 || Date of print 31-10-2025 || Version: 1.0  
(ID no. 31102025\_136/SDS/EN)

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## **15. Regulatory Information**

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

Not applicable

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## **16. Other Information**

Any other intended applications should be discussed with the manufacturer. Corresponding occupational protection measurements must be followed.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

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