

# Safety data sheet

## Bedrock 3D TPU 64D Black

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Forward AM Technologies Netherlands BV - Safety data sheet according to UN GHS 4th rev.  
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### 1. Identification

#### Product identifier

## Bedrock 3D TPU 64D Black

| Recommended use: 3D Printing

#### Details of the supplier of the safety data sheet

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)

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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)

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

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### **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**

Not applicable

### **Mixtures**

Chemical nature

Polymer based on: polyurethane, stabilizing agents, additives

Hazardous ingredients (GHS)

According to UN GHS criteria

No particular hazards known.

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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

*Information on: Carbon black*

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*Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.*

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

**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**

**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. Vacuum up spilled product.

Reclaim for processing if possible. Ensure adequate ventilation.

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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.

Protection against fire and explosion:

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The product is not an oxidizer, not self-combustible and not explosive.

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

Segregate from foods and animal feeds.

Suitable materials for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE), Paper/Fibreboard

Further information on storage conditions: Avoid extreme heat. Protect against moisture.

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

| 1333-86-4: Carbon black

**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

Form:	filament
Colour:	black
Odour:	odourless
Odour threshold:	not applicable, odour not perceivable
pH value:	6 - 8 (20 °C)
softening temperature:	> 120 °C
boiling temperature:	The product is a non-volatile solid.
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:	> 400 °C
Vapour pressure:	not determined
Density:	approx. 1,1 - 1,2 g/cm <sup>3</sup> (20 °C)
Relative density:	approx. 1,1 - 1,2 (20 °C)
Relative vapour density (air):	The product is a non-volatile solid.
Solubility in water:	insoluble
Partitioning coefficient n-octanol/water (log Kow):	not applicable for mixtures
Self ignition:	not self-igniting
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated. > 230 °C Thermal decomposition above the indicated temperature is possible. Prolonged thermal loading can result in products of degradation being given off.
Explosion hazard:	not explosive
Fire promoting properties:	not fire-propagating

### Other information

Self heating ability:	It is not a substance capable of spontaneous heating according to UN transport regulations class 4.2.
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Bulk density: 500 - 700 kg/m<sup>3</sup>  
(20 °C)

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## 10. Stability and Reactivity

### Reactivity

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

Corrosion to metals: No corrosive effect on metal.

### 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

No conditions to avoid anticipated.

### Incompatible materials

Substances to avoid:  
oxidizing agents

### 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:

Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact. Contact with molten product may cause thermal burns.

Experimental/calculated data:

(oral):No applicable information available.

(by inhalation):The inhalation of dusts represents a potential acute hazard.

(dermal):No applicable information available.

#### Irritation

Assessment of irritating effects:

Not irritating to eyes and skin. May cause mechanical irritation.

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Respiratory/Skin sensitization

Assessment of sensitization:

| Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Assessment of mutagenicity:

| Based on available data, the classification criteria are not met.

Carcinogenicity

Assessment of carcinogenicity:

The chemical structure does not suggest a specific alert for such an effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Reproductive toxicity

Assessment of reproduction toxicity:

| Based on available data, the classification criteria are not met.

Developmental toxicity

Assessment of teratogenicity:

| Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

| Based on available data, the classification criteria are not met.

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

Assessment of repeated dose toxicity:

| Based on available data, the classification criteria are not met.

Aspiration hazard

| not applicable

Other relevant toxicity information

The product has not been tested. The statement has been derived from the properties of the individual components.

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## **12. Ecological Information**

### **Toxicity**

Assessment of aquatic toxicity:

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There is a high probability that the product is not acutely harmful to aquatic organisms. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

### **Persistence and degradability**

Assessment biodegradation and elimination (H<sub>2</sub>O):  
Poorly biodegradable.

Elimination information:  
Poorly biodegradable.

### **Bioaccumulative potential**

Assessment bioaccumulation potential:  
Does not significantly accumulate in organisms.

### **Mobility in soil**

Assessment transport between environmental compartments:  
Adsorption in soil: Due to the product characteristics the test is impossible.

### **Results of PBT and vPvB assessment**

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria.

### **Other adverse effects**

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

### **Additional information**

Adsorbable organically-bound halogen (AOX):  
This product contains no organically-bound halogen.

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.

Other ecotoxicological advice:  
The ecotoxic effect of the product has not been tested. The information on this was derived from products of similar structure or composition.

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## **13. Disposal Considerations**

### **Waste treatment methods**

Dispose of in accordance with national, state and local regulations.  
Contact specialized companies about recycling.

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Contaminated packaging:  
Dispose of in accordance with national, state and local regulations.  
Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

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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 user	None known

### 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

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	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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## **15. Regulatory Information**

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

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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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