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**SECTION 1 – Identification of the substance/mixture and of the company**

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**Product Name** ZEPHYR KRATIR PA11 CF MC  
**Chemical Name** Polyamide with carbon fiber  
**Pure substance/mixture** Mixture

**Section 1.2 – Relevant identified uses of the substance or mixture and uses advised against**

**Application** Additive Manufacturing  
**Used advised against** Not identified.

**Section 1.3 – Details of the supplier of the safety data sheet**  
**Manufacturer**

Tectonic 3D B.V.  
High Tech Campus 9  
5656 AE Eindhoven  
The Netherlands  
Tel +31 (0) 408517575  
<https://www.tectonic-3d.com/>

**E-mail address** [info@tectonic-3d.com](mailto:info@tectonic-3d.com)

**Section 1.4 – Emergency telephone number**

**Europe**  
**Emergency telephone** +31 (0) 408517575 (08.00-17.00 CET)

**United Kingdom** See above.

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**SECTION 2 - Hazards Identification Summary**

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**Section 2.1 – Classification of the substance or mixture****Classification according to Regulation (EC) NO. 1272/2008 [CLP]**

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP].

**Section 2.2 – Label elements**

According to EC directives or the corresponding national regulations the product does not have to be labelled.

**Symbols/Pictograms**

Not applicable.

**Signal word**

None.

**Hazard Statements**

Not applicable.

**Precautionary Statements**

Not applicable.



**Additional information**

In process of carbon enhanced materials particles of fibers can be released. These comply with alveolar fibers (WHO-Criteria). Such fibers are classified into the category 2 of carcinogenic substances of TRGS 905 (revision of 26.03.2018). Because of that, measures to reduce the loads have to be implemented (enclosure and aspiration). A valuation of the loads at the workplace must be done from the operator.

**Section 2.3 – Other Hazards**

The hazards of this product are associated mainly with its processing. Molten polymer will produce thermal burns. Polymer dust may represent a fire hazard at sufficient concentrations in presence of ignition sources.

**SECTION 3 – Composition/information on ingredients****Section 3.1 – Substances**

Not applicable

**Section 3.2 – Mixtures**

| Chemical Name | EC No         | CAS No       | REACH<br>Registration<br>Number | Weight<br>% | Classification<br>according to<br>Regulation (EC) No.<br>1272/2008 [CLP] |
|---------------|---------------|--------------|---------------------------------|-------------|--------------------------------------------------------------------------|
| Polyamide 11  | Not available | XX-XX-X      | No data available               | > 99.9      | Not classified                                                           |
| Carbon fiber  | Not available | 7440-44-0    | 01-2119966900-32                | 15-20       | Not classified                                                           |
| Foaming agent | Not available | Trade secret | No data available               | 2-5         | Not classified; proprietary                                              |

**SECTION 4 – First Aid Measures****Section 4.1 – Description of first aid measures****Inhalation**

Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion. Consult a physician after significant exposure.

**Skin Contact**

In contact with molten product immediately flush with cold water for at least 10 min. Do not peel solidified polymer of skin. Obtain medical attention.

**Eye Contact**

Rinse thoroughly with plenty of water for at least 20 minutes, also under the eyelids. Consult a physician immediately.

**Ingestion**

Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur and show mSDS.

**Section 4.2 – Most important symptoms and affects, both acute and delayed**

No known symptoms to date. May cause respiratory irritation.

**Section 4.3 – Indication of any immediate medical attention and special treatment needed**

No relevant information available Treat symptomatically.

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## SECTION 5 – Firefighting Measures

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### Section 5.1 – Extinguishing media

#### Suitable extinguishing media

Water spray(fog), Foam, Carbon Dioxide( $CO_2$ ), Extinguishing powder.

#### Unsuitable extinguishing media

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

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

In case of fire may be liberated: Carbon monoxide (CO), Carbon Dioxide ( $CO_2$ ), Ammonia ( $NH_3$ ) Combustible

#### Hazardous combustion products

In case of fire: Gases/vapors, toxic

### Section 5.3 – Advice for firefighters

In the event of fire, wear self-contained breathing apparatus and chemical protective clothing.

### Section 5.4 – Additional information

Fire class A (Fires of solids, mainly organic nature, which normally burn down under glow forming.) Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

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## Section 6 – Accidental Release Measures

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

#### 6.1.1. For non-emergency personnel

Special danger of slipping by leaking/spilling product. Avoid breathing dust/fume/gas/mist/vapors/spray.

Remove persons to safety.

#### Protective equipment:

Wear breathing apparatus if exposed to vapors/dusts/aerosols. Wear protective gloves/protective clothing/eye protection/face protection

#### 6.1.2. For emergency responders

##### Personal protection equipment:

Use appropriate respiratory protection. Personal protection equipment: see section 8

### Section 6.2 – Environmental precautions

Take up mechanically. Do not allow to enter into surface water or drains.

### Section 6.3 – Methods and material for containment and cleaning

#### Methods for containment

Collect spillage. Measures to prevent aerosol and dust generation Wet clean or vacuum up solids.

#### Methods for cleaning

Water (with cleaning agent)

### Section 6.4 – Reference to other sections

Disposal: see section 13 Personal protection equipment: see section 8 Safe handling: see section 7.

### 6.5 Additional Information

Clear spills immediately. Use appropriate container to avoid environmental contamination.



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## Section 7 – Handling and Storage

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### Section 7.1 – Precautions for safe handling

#### Protective measures

#### Advices on safe handling

No special technical protective measures are necessary. Wear personal protection equipment (refer to section 8).

#### Fire prevent measures

Usual measures for fire prevention.

#### Measures to prevent aerosol and dust generation

Dust should be exhausted directly at the point of origin.

#### Advices on general occupational hygiene

Do not eat, drink or smoke or sniff when using this product. Wash hands before breaks and after work. Avoid contact with skin, eyes and clothes.

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

#### Technical measures and storage conditions:

Recommended storage temperature <40 °C Keep container tightly closed in a cool, well-ventilated place.

Storage class (TRGS 510, Germany): 11 – Combustible solids that cannot be assigned to any of the above storage classes.

### Section 7.3 – Specific end use(s)

See the Technical data sheet (sTDs) for further information

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## Section 8 – Exposure Controls/Personal Protection

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### 8.1 – Control parameters

No data available.

### Section 8.2 – Exposure Controls

#### 8.2.1. Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.

#### 8.2.2. Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields EN 166 (or goggles)

Skin and Body protection

Hand protection is not required. Tested protective gloves must be worn EN ISO 374 Suitable material: Breakthrough time: min In the case of wanting to use the gloves again, clean them before taking off and air them well.

Respiratory protection

Usually no personal respirative protection necessary. Particle filter device (EN 143)

### 8.2.3. Environmental exposure controls

Do not use above following temperatures: 300 °C

### 8.3 Additional information

In process of carbon enhanced materials particles of fibers can be released. These comply with alveolar fibers (WHO-Criteria). Such fibers are classified into the category 2 of carcinogenic substances of TRGS 905 (revision of 26.03.2018). Because of that, measures to reduce the loads have to be implemented (enclosure and aspiration). A valuation of the loads at the workplace must be done from the operator.

## Section 9 – Physical and Chemical Properties

### Section 9.1 – Information on basic physical and chemical properties

|                       |                |
|-----------------------|----------------|
| <b>Appearance</b>     | Filament       |
| <b>Color</b>          | Black          |
| <b>Odor</b>           | Not determined |
| <b>Odor threshold</b> | Not applicable |

| Property                             | Value      | Remarks Method                    |
|--------------------------------------|------------|-----------------------------------|
| <b>PH</b>                            |            | Not determined                    |
| <b>Melting point</b>                 | 189 °C     | DSC, 10K/min   DIN EN ISO 11357-3 |
| <b>Freezing point</b>                |            | Not determined                    |
| <b>Boiling point / boiling range</b> |            | Not determined                    |
| <b>Flash point</b>                   |            | Not determined                    |
| <b>Evaporation rate</b>              |            | Not determined                    |
| <b>Flammability (solid, gas)</b>     |            | Not determined                    |
| <b>Explosive limits</b>              |            | Not determined                    |
| <b>Upper explosive limits</b>        |            | Not determined                    |
| <b>Lower explosive limits</b>        |            | Not determined                    |
| <b>Vapor Pressure</b>                |            | Not determined                    |
| <b>Vapor Density</b>                 |            | Not determined                    |
| <b>Relative Density</b>              |            | Not determined                    |
| <b>Water Solubility</b>              |            | Insoluble in water                |
| <b>Solubility(ies)</b>               |            | No information available          |
| <b>Partition Coefficient</b>         |            | No information available          |
| <b>Autoignition Temperature</b>      |            | No information available          |
| <b>Decomposition Temperature</b>     |            | No information available          |
| <b>Kinematic Viscosity</b>           |            | No information available          |
| <b>Dynamic Viscosity</b>             |            | No information available          |
| <b>Explosive properties</b>          |            | No information available          |
| <b>Oxidizing properties</b>          |            | No information available          |
| <b>Density</b>                       | 1.12 g/cm3 | 23°C   ISO 1183                   |
| <b>Bulk Density</b>                  |            | No information available          |

### Section 9.2 – Other information

No information available



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**Section 10 – Stability and Reactivity**

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**Section 10.1 – Reactivity**

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion. Combustible

**Section 10.2 – Chemical stability**

The product is stable under storage at normal ambient temperatures.

**Section 10.3 – Possibility of hazardous reactions**

Thermal decomposition can lead to the escape of irritating gases and vapors. Danger of dust explosion.

**Section 10.4 – Conditions to avoid**

Protect from moisture.

**Section 10.5 – Incompatible materials**

Further information on proper storage: see section 7.

**Section 10.6 – Hazardous decomposition products**

Gases/vapors, toxic

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**Section 11 – Toxicological Information**

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**Section 11.1 – Information on toxicological effects****Acute oral toxicity**

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

**Acute dermal toxicity**

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

**Acute inhalation**

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

**Skin corrosion/irritation**

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

**Serious eye damage/eye irritation**

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

**Respiratory or skin sensitization**

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

**Germ cell mutagenicity**

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

**Carcinogenicity**

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

**Reproductive toxicity**

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

**STOT – Single exposure**

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

**STOT – Repeated exposure**

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

**Aspiration hazard**

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

**Section 11.2 – Information on other hazards**

No data available

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**Section 12 – Ecological Information**

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**Section 12.1 – Toxicity**

No data available.

**Section 12.2 – Persistence and degradability**

No data available

**Section 12.3 – Bio accumulative potential**

No data available

**Section 12.4 – Mobility in soil**

No data available.

**Section 12.5 – Results of PBT and vPvB assessment**

No data available

**Section 12.6 – Endocrine disrupting properties**

No data available

**Section 12.7 – Other adverse effects**

No data available

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**Section 13 – Disposal Considerations**

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**Section 13.1 – Waste treatment methods****Waste from residues/unused products**

Non-hazardous waste according to Directive 2008/98/EC (waste framework directive).

**13.1.1. Product/Packaging disposal**

Waste codes/waste designations according to EWC/AVV Waste code packaging

**Remark:**

Non-hazardous waste according to Directive 2008/98/EC (waste framework directive).

**Waste treatment options**

Appropriate disposal / Product:

Dispose of waste according to "Kreislaufwirtschaftsgesetz (KrWG)". Consult the appropriate local waste disposal expert about waste disposal.

**Appropriate disposal / Package:**

Completely emptied packages can be recycled.



**Contaminated packaging**

Thoroughly emptied and clean packaging may be recycled.

**Other information**

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

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**Section 14 – Transport Information**

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**RID/ADR: Land Transport**

|                                          |                                                            |
|------------------------------------------|------------------------------------------------------------|
| <b>14.1 UN Number</b>                    | No dangerous good in sense of these transport regulations. |
| <b>14.2 UN Proper Shipping Name</b>      | No dangerous good in sense of these transport regulations. |
| <b>14.3 Transport Hazard Class(es)</b>   | Not relevant.                                              |
| <b>14.4 Packing Group</b>                | Not relevant.                                              |
| <b>14.5 Environmental Hazard</b>         | Not relevant.                                              |
| <b>14.6 Special Precautions For User</b> | Not relevant.                                              |

**AND: Inland waterway craft**

|                                          |                                                            |
|------------------------------------------|------------------------------------------------------------|
| <b>14.1 UN Number</b>                    | No dangerous good in sense of these transport regulations. |
| <b>14.2 UN Proper Shipping Name</b>      | No dangerous good in sense of these transport regulations. |
| <b>14.3 Transport Hazard Class(es)</b>   | Not relevant.                                              |
| <b>14.4 Packing Group</b>                | Not relevant.                                              |
| <b>14.5 Environmental Hazard</b>         | Not relevant.                                              |
| <b>14.6 Special Precautions For User</b> | Not relevant.                                              |

**IMDG: Sea Transport**

|                                                                                      |                                                            |
|--------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>14.1 UN Number</b>                                                                | No dangerous good in sense of these transport regulations. |
| <b>14.2 UN Proper Shipping Name</b>                                                  | No dangerous good in sense of these transport regulations. |
| <b>14.3 Transport Hazard Class(es)</b>                                               | Not relevant.                                              |
| <b>14.4 Packing Group</b>                                                            | Not relevant.                                              |
| <b>14.5 Marine Pollutant</b>                                                         | Not relevant.                                              |
| <b>14.6 Special Precautions For User</b>                                             | Not relevant.                                              |
| <b>14.7 Transport In Bulk According to Annex II of MARPOL 73/78 and The IBC Code</b> | Not relevant.                                              |

**ICOA-TI / IATA-DGR: Air Transport**

|                                          |                                                            |
|------------------------------------------|------------------------------------------------------------|
| <b>14.1 UN Number</b>                    | No dangerous good in sense of these transport regulations. |
| <b>14.2 UN Proper Shipping Name</b>      | No dangerous good in sense of these transport regulations. |
| <b>14.3 Transport Hazard Class(es)</b>   | Not relevant.                                              |
| <b>14.4 Packing Group</b>                | Not relevant.                                              |
| <b>14.5 Environmental Hazard</b>         | Not relevant.                                              |
| <b>14.6 Special Precautions For User</b> | Not relevant.                                              |

**14.7 Maritime Transport in bulk according to IMO instruments**

No data available.

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**Section 15 – Regulatory Information**

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**Section 15.1 – Safety, health and environmental regulation/legislation specific for the substance or mixture**

|                                          |                                                                                                                                                                        |                                                  |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <b>International Regulations</b>         | Not applicable.                                                                                                                                                        | Source:                                          |
| <b>European Union</b>                    | Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive]: This product is not assigned to a hazard category |                                                  |
| <b>National regulations</b>              |                                                                                                                                                                        |                                                  |
| <b>Germany</b>                           |                                                                                                                                                                        |                                                  |
| Water hazard class (WGK)                 | nwg - non-hazardous to water                                                                                                                                           | Self-classification (mixture; calculation rule). |
| Restrictions of occupation               | Observe employment restrictions according to MuSchG and JArbSchG                                                                                                       | Störfallverordnung (12. BlmschV)                 |
| For substances contained in the product: | This product is not assigned to a hazard category.                                                                                                                     |                                                  |

**Section 15.2 – Chemical Safety assessment**

Not data available

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**Section 16 – Other information**

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**Key or legend to abbreviations and acronyms used in the safety data sheet**

|                      |                          |
|----------------------|--------------------------|
| <b>Issue Date</b>    | 23-February-2026         |
| <b>Revision Date</b> | No information available |
| <b>Revision Note</b> | No information available |

**This safety data sheet complies with the requirements of:** Regulation (EC) No. 1907/2006, COMMISSION REGULATION (EU) No. 830/2015 of 20 May 2015

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**End of Safety Data Sheet**