Tectonic 3D

Safety Data Sheet

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

Product Name KRATIR PA11 CF
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

Section 1.4 – Emergency telephone number

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

United Kingdom See above.

SECTION 2 - Hazards Identification Summary

Section 2.1 – Classification of the substance or mixture

Classification according to Regulation (EC) N0. 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
No data available.

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.

SECTION 5 – Firefighting Measures

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.

Section 6 – Accidental Release Measures

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.

Section 7 – Handling and Storage

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

Section 8 – Exposure Controls/Personal Protection

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

Appearance	Filament
Color	Black
Odor	Not determined
Odor threshold	Not applicable

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

Section 9.2 – Other information

No information available

Section 10 – Stability and Reactivity

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

Section 11 – Toxicological Information

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

Section 12 – Ecological Information

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

Section 13 – Disposal Considerations

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.

Section 14 – Transport Information

RID/ADR: Land Transport

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

AND: Inland waterway craft

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

IMDG: Sea Transport

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

ICOA-TI / IATA-DGR: Air Transport

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

14.7 Maritime Transport in bulk according to IMO instruments

No data available.

Section 15 – Regulatory Information

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

International Regulations	Not applicable.	Source:
European Union	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	
National regulations		
Germany		
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. BImschV)
For substances contained in the product:	This product is not assigned to a hazard category.	

Section 15.2 – Chemical Safety assessment

Not data available

Section 16 – Other information

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

Issue Date	20-Sept-2023
Revision Date	No information available
Revision Note	No information available

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

End of Safety Data Sheet