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

Product Name KRATIR PET CF
Chemical Name Polyethylene terephthalate 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

No data available.

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

Does not contain PBT or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

The mixture does not contain substances included in the list drawn up in accordance with Article 59(1) of REACH for having endocrine disrupting properties or identified as having endocrine disrupting properties according to the criteria laid down in Delegated Regulation (EU) 2017/2100 or Delegated Regulation (EU) 2018/605 in a concentration equal to or greater than 0.1 %.

Component

Polymers and Harmless Additives

The mixture does not contain substances included in the list drawn up in accordance with Article 59(1) of REACH for having endocrine disruptive properties, or has been identified as having endocrine disruptive properties according to the criteria set out in Delegated Regulation (EU) 2017/2100 or Delegated Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1 %.

SECTION 3 – Composition/information on ingredients

Section 3.1 – Substances

Not applicable

Section 3.2 – Mixtures

Chemical Name	EC No	CAS No	REACH Registration Number	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Polyethylene terephthalate	Polymer	25038-59-9	No data available	-	Not classified
Polymers and Harmless Additives	-	-	No data available	-	Not classified
Carbon Fiber	926-722-4	308063-56-1	No data available	15	Not classified

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**

ABC-powder Carbon dioxide (CO_2), Water spray jet alcohol resistant foam 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), 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

Polyethylene terephthalate (25038-59-9)

Germany - Occupational Exposure Limits (TRGS 900)

AGW (OEL TWA [1])

1,25 mg/m³ (dust-respirable fraction (plastic dust))

10 mg/m³ (dust-inhalable fraction (plastic dust))

Polyethylene terephthalate (25038-59-9)

Latvia - Occupational Exposure Limits (TRGS 900)

OEL TWA

5 mg/m³

Lithuania

IPRV (OEL TWA)

OEL chemical category

5 mg/m³

Fibrogenic substance

Carbon Fiber (308063-56-1)

Austria - Occupational Exposure Limits

Local name

MAK (OEL TWA)

MAK (OEL STEL)

Reference Legislation

Graphit (alveolarstaub with < 1% quartz)

5 mg/m³ (alveolar dust with <1% Quartz, respirable fraction)

10 mg/m³ (alveolar dust with <1% Quartz, respirable fraction)

BGBI. II Nr. 156/2021

Poland - Occupational Exposure Limits

Local name

NDS (OEL TWA)

Comment

Grafit syntetyczny

6 mg/m³ (synthetic-inhalable fraction)

Fracja wdychalna – frakcja aerozolu wnikać przez nos i usta, która po zdeponowaniu w drogach oddechowych stwarza zagrożenie dla zdrowia.

Dz. U. 2018 poz. 1286

Reference Legislation

United Kingdom - Occupational Exposure Limits

Local name

WEL TWA [1]

Reference Legislation

10 mg/m³ inhalable dust

4 mg/m³ respirable

EH40/2005 (Fourth edition, 2020). HSE

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

Skin and Body protection

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

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	225 °C	DSC, 10K/min DIN EN ISO 11357-3
Freezing point		Not determined
Boiling point / boiling range		Not determined
Flash point	> 100 °C	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	1.44 g/cm ³	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

None under recommended storage and handling conditions (see section 7).

Section 10.5 – Incompatible materials

No information available

Section 10.6 – Hazardous decomposition products

Under normal storage and use conditions, no dangerous decomposition products will arise

Section 11 – Toxicological Information

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

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

Carbon fiber (308063-56-1)

LD50 Oral Rat

> 10000 mg/kg

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: 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	Not relevant.
14.2 UN Proper Shipping Name	Not relevant.
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	Not relevant.
14.2 UN Proper Shipping Name	Not relevant.
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	Not relevant.
14.2 UN Proper Shipping Name	Not relevant.
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

Not relevant

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. BlmschV)
For substances contained in the product:	This product is not assigned to a hazard category.	
Netherlands		
ABM category	A(4) - Little harmful to aquatic organisms, can cause long-term harmful effects in the aquatic environment	
SZW list of carcinogens	This product is not assigned to a hazard category	
SZW list of mutagenic substances	This product is not assigned to a hazard category	
SZW list of reprotoxic substances – Breastfeeding	This product is not assigned to a hazard category	
SZW list of reprotoxic substances – Fertility	This product is not assigned to a hazard category	
SZW list of reprotoxic substances – Development	This product is not assigned to a hazard category	
Switzerland		
Storage Class (LK)	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	23-May-2024
Revision Date	No information available
Revision Note	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