



MATERIAL SAFETY DATA SHEET
according to Regulation (EU) No. 1907/2006

PAHT CF by Innofil3D BV

1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

Trade name	: Innofil3D PAHT CF
Chemical name	: High temperature Polyamide with Carbon Fibers
Chemical family	: Thermoplastic Copolymer
Use	: Monofilament for 3D-printing
Company	: Innofil3D BV
Street address	: Eerste Bokslotweg 17
Postal code and city	: 7821 AT Emmen
Country	: The Netherlands
Telephone number	: +31 (0) 591 820 389

2. HAZARDS IDENTIFICATION

Classification of substance or mixture	: Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.
Labelling	: Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.
Other hazards	: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition	: Mixture.
Remarks	: No hazardous ingredients.



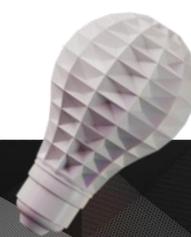
4. FIRST-AID MEASURES

Description of first aid measures

- General advice : Move out of dangerous area. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice. Give oxygen or artificial respiration if needed.
- Inhalation : Move to fresh air. If symptoms persist, call a physician.
- Ingestion : If symptoms persist, call a physician.
- Skin contact : Do NOT use solvents or thinners. Wash off with soap and water. If symptoms persist, call a physician. Cool melted product on skin with plenty of water. Do not remove solidified product. In case of burns apply cold water until pain subsides then seek medical advice.
- Eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Keep eye wide open while rinsing.
- Symptoms : No information available.
- Treatment : No information available.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Unsuitable media : High volume water jet.
- Specific hazards during fire-fighting : Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Do not use a solid water stream as it may scatter and spread fire. Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.
- Hazardous combustion products : Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). Nitrogen oxides (NOx). Hydrogen cyanide (hydrocyanic acid). Sulphur compounds. Metal oxides. Ammonia
- Special protective equipment for firefighters : Exposure to decomposition products may be a hazard to health. In the event of fire, wear self-contained breathing apparatus.
- Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. In the event of fire and/or explosion do not breathe fumes.



6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Avoid inhalation of vapor or mist. Contaminated surfaces will be extremely slippery. Treat recovered material as described in the section "Disposal considerations".
- Environmental precautions : Should not be released into the environment. Do not allow contact with soil, surface or ground water. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
- Methods for cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Avoid dust formation.

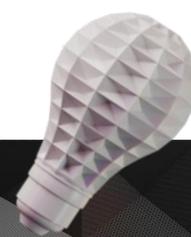
7. HANDLING AND STORAGE

Precautions for safe handling

- Advice on safe handling : Provide for appropriate exhaust ventilation and dust collection at machinery. The material can accumulate static charge and can therefore cause electrical ignition. Minimize dust generation and accumulation. Dust must be collected and disposed of carefully. Wear personal protective equipment. Do not breathe vapors/dust.
- Advice on protection against fire and explosion : Take measures to prevent the buildup of electrostatic charge. During processing, dust may form explosive mixture in air. Keep away from heat and sources of ignition. Normal measures for preventive fire protection.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing. Keep away from food and drink. General industrial hygiene practice. When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Keep containers tightly closed in a dry, cool and well-ventilated place.
- Further information on storage conditions : Keep away from heat and sources of ignition. Keep away from direct sunlight. Avoid moisture.
- Advice on common storage : Keep away from food, drink and animal feeding stuffs.
- Storage class (TRGS 510) : 11, Combustible Solids.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End use	Exposure routes	Potential health effects	Value
Carbon black	Workers	Inhalation		2 mg/m ³
Remarks:	DNEL (long-term rep.)			

Exposure controls

Engineering measures : Provide sufficient air exchange and/or exhaust in work rooms. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Apply measures to prevent dust explosions.

Personal protective equipment:

Eye protection : Safety glasses with side-shields

Hand protection : Protective gloves.

Skin and body protection : Safety shoes. Wear suitable protective clothing.

Respiratory protection : Effective dust mask. In case of vapor formation use a respirator with an approved filter.

Protective measures : Follow the skin protection plan.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Filament

Color : Black

Physical state : Solid

Odor : Characteristic

Melting point/range : 230 °C

Boiling point/range : Not determined

Flammability : No data available

Lower explosion limit : The product is not explosive at itself, but it may form explosive dust

Density : Not determined

pH : Not determined

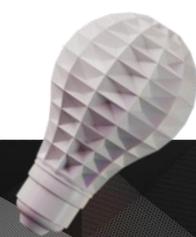
Vapor pressure : Not determined

Decomposition temperature : No data available

Water solubility : Not determined

Solubility in other solvents : Not determined

Conductivity : Not determined



10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	The product is chemically stable.
Possibility of hazardous reactions	:	Finely dispersed particles form explosive mixtures with air. Burning produces noxious and toxic fumes.
Conditions to avoid	:	Keep away from heat and sources of ignition. Avoid dust formation.
Materials to avoid	:	No data available.
Hazardous decomposition products	:	Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). Nitrogen oxides (NOx). Hydrogen cyanide (hydrocyanic acid). Styrene. Sulphur oxides. Metal oxides. Ammonia.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	No data available.
Acute inhalation toxicity	:	No data available.
Acute dermal toxicity	:	No data available.
Skin corrosion/irritation	:	No known irritant effect. May cause irritation of respiratory tract.
Serious eye damage/irritation	:	Dust contact with the eyes can lead to mechanical irritation.
Respiratory or skin sensitization	:	No known sensitizing effect.
Germ cell mutagenicity	:	In vitro and in vivo; no data available.
Carcinogenicity	:	This information is not available.
Reproductive toxicity	:	Effects on fertility; no data available.
STOT – single exposure	:	No data available.
STOT – repeated exposure	:	No data available.
Aspiration toxicity	:	No data available.

12. ECOLOGICAL INFORMATION

<u>Toxicity</u>		
Toxicity to fish	:	No data available.
Toxicity to daphnia and other aquatic invertebrates	:	No data available.
Toxicity to algae	:	No data available.
Toxicity to microorganisms	:	No data available.
<u>Persistence and degradability</u>		
Biodegradability	:	No data available.
<u>Bioaccumulative potential</u>		
Bioaccumulation	:	No data available.



Partition coefficient: n-octanol/water	: No data available.
<u>Mobility in soil</u>	
Mobility	: No data available.
<u>Results of PBT an vPvB assessment</u>	
Assessment	: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
<u>Other adverse effects</u>	
Additional ecological information	: Should not be released into the environment.

13. DISPOSAL CONSIDERATIONS

<u>Waste treatment methods</u>	
Product	: Dispose of in accordance with the European Directives on waste and hazardous waste. In accordance with local and national regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
Contaminated packaging	: Dispose of in accordance with local regulations. Dispose of as unused product.

14. TRANSPORT INFORMATION

UN number	: Not regulated as a dangerous good.
UN proper shipping name	: Not regulated as a dangerous good.
Transport hazard class(es)	: Not regulated as a dangerous good.
Packing group	: Not regulated as a dangerous good.
Environmental hazards	: Not regulated as a dangerous good.
Special precautions for user	: Not applicable.
Transport in bulk according to Annex II of Marpol and the IBC Code	: Not applicable for product as supplied.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture	
Chemical safety assessment	: A Chemical Safety Assessment is not required for this substance.



16. OTHER INFORMATION

- The information in this Material Safety Data Sheet (MSDS) is mainly based on information used from the supplier of the raw materials which are used for production of the filaments.
- The information in this Material Safety Data Sheet (MSDS) is based on current knowledge and experience. No liability can be assumed for the accuracy and completeness of this information.
- Users should consider this information only as additional to other data gathered. Independent determination of suitability and completeness of information from all available sources is essential to ensure proper and safe use and disposal of these materials.
- The information in this MSDS applies for this specific material only. It therefore does not apply for its usage in combination with other materials or ways of processing.