

SAFETY DATA SHEET

by Commission Regulation (EC) No 830/2015 (REACH)

PRODUCT NAME: Fillamentum Flexfill TPU 98A

Revision date: 20.8.2019/3

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

1.1 Identification of the substance / preparation

Product name: Fillamentum Flexfill TPU 98A

1.2 Application

Use of the substance or mixture: Filaments for 3D printing
Recommended restrictions on use: Designed for professional / industrial use.

1.3 Manufacturer / Supplier:

Company: Fillamentum Manufacturing Czech s.r.o.
Address: nám. Míru 1217
768 24 Hulín
Czech Republic
ID: 29233275
Website: www.fillamentum.com
Telephone: +420 720 060 947
E-mail: helpdesk@fillamentum.com

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification

The substance or mixture is not hazardous according to Regulation (EC) No 1272/2008.

2.2 Label elements

The substance or mixture is not hazardous according to Regulation (EC) No 1272/2008.

2.3 Other hazards

No information available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Type of product: Mixture

3.1 Mixtures

Thermoplastic polyurethane.
No hazardous ingredients according to the Regulation (EC) No 1907/2006 (REACH).
This product contains no substances mentioned in the Article 57 of the Regulation (EC) No 1907/2006.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

In case of skin contact: AFTER CONTACT WITH HOT MELTED MATERIAL: Immediately cool with plenty of water. Do not remove the product crusts created on skin by violence or with solvents. Seek medical attention immediately for the treatment of potential skin burns.
AFTER CONTACT WITH MATERIAL AT ROOM TEMPERATURE: Carefully wash skin with plenty of water and soap.

4.2 Most important symptoms and effects, both acute and delayed

Instructions for physician: No information is available.

4.3 Indication of any immediate medical attention and special treatment needed

Therapeutic measures: No information is available.

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SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Water, carbon dioxide (CO₂), dry extinguishing agent.

5.2 Special hazards arising from the substance or mixture

In the event of fire, the material releases carbon oxide, carbon dioxide, nitrogen oxides and traces of hydrogen cyanide (hydrocyanic acid).

Do not inhale gaseous vapours in the event of fire or explosion.

5.3 Advice for firefighters

In the event of fire disposal, it is necessary to use the respiratory protection with independent air supply.

Water contaminated by fire disposal should not get into the soil, into bottom and surface water.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use the protection equipment (see Section 8). Ensure good ventilation.

Avoid the presence of unauthorized persons.

6.2 Environmental precautions

Do not allow entering in surface water or canalization.

6.3 Methods and material for containment and cleaning up

Collect mechanically. It is necessary to avoid dust creation.

Sweep and transfer into the appropriate disposal container.

6.4 Reference to other sections

For other disposal see Section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Adequate ventilation should be ensured while processing. Under the recommended conditions of processing, a small amount of emissions may be released.

Sufficient workplace ventilation should ensure that the limits stated in Section 8 are not exceeded. Effective ventilation should be ensured while mechanical processing.

Store away from foodstuff. Wash your hands and face after working with the material.

7.2 Conditions for safe storage, including any incompatibilities

Keep the package well closed and dry.

Storage class (TRGS 510): 11: Combustible solids

Storage temperature: < 40 °C

7.3 Specific end uses

No information is available.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

While processing of this product, the regulations for the substances listed below must be complied. The limits stated below may be complied only with sufficient ventilation of vapours released during processing.

8.2 Exposure controls

Hand protection:	Materials suitable for the protective gloves according to EN 374: polyvinylchloride - PVC ($\geq 0,5$ mm) Contaminated or damaged gloves must be replaced.
Eye protection:	Use personal protection equipment for eyes and face.
Skin and body protection:	Use the protective clothing.
Other protective measures:	Do not inhale dust or vapours. Lubricate the skin.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical Appearance:	Solid, natural or coloured filament
Odor:	Slight odour
pH:	Not applicable
Melting point:	> 120 °C
Upper/lower flammability or explosive limits:	Not applicable for the product
Vapor pressure:	Not applicable
Density:	ca. 1,2 g/cm ³
Specific gravity:	500-700 kg/m ³
Water solubility:	Practically insoluble substance
Auto-ignition temperature:	Not applicable
Ignition temperature:	> 210 °C
Dynamic viscosity:	Not applicable

9.2 Other information

The mentioned values may not match the product specification. The specific values must be found in the technical datasheet.

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SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No information available.

10.2 Chemical stability

Decomposition under temperature higher than 230 °C.

10.3 Possibility of hazardous reactions

No hazardous reactions were observed.

10.4 Conditions to avoid

No information available.

10.5 Incompatible materials

No information available.

10.6 Hazardous decomposition products

In case of glowing or incomplete combustion, the mixtures of toxic gases with CO and CO₂ content develop.

While temperature stress (during processing or drying), small quantities of the product can be converted to isocyanates. In fact, the substance is diisopropylphenyl isocyanate.

Exceeding of the recommended processing temperature significantly increases the isolation of isocyanates.

Overexposure causes a risk of concentration-dependent inhalation irritation and/or of sensitization due to isocyanates (possible respiratory failure, cough, asthma). For hypersensitive people, reactions may occur at very low concentrations of isocyanate.

This product must be handled in compliance with the regulations for the following substances.

isocyanates (all, as like -NCO)

diisopropylphenyl isocyanate

EC No. 248-885-4

CAS No. 28178-42-9

Inclusion (1272/2008/EG):

Acute Tox. 4 Oral H302

Acute Tox. 1 Inhalative H330

Skin Corr. 1B H314

Eye Dam. 1 H318

Resp. Sens. 1 H334

STOT SE 3 H335

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicologic tests of the product are not available.

Information that are available:

11.1 Information on toxicological effects

Acute toxicity, orally:

thermoplastic polyurethane

LD50 rat: > 5.000 mg/kg

method: guideline for testing OECD 423

study of a comparable product

Acute toxicity, dermally:

thermoplastic polyurethane

LD50 rat: > 2.000 mg/kg

study of a comparable product

Acute toxicity, inhalation:

thermoplastic polyurethane

results: substance or mixture is not toxic for acute inhalation

study of a comparable product

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Primary irritant effect:	thermoplastic polyurethane species: rabbit results: no irritation classification: no irritation of skin method: guideline for testing OECD 404 study of a comparable product
Mucous membrane irritation:	thermoplastic polyurethane species: rabbit results: no irritation classification: no irritation of eyes study of a comparable product
Sensitization:	thermoplastic polyurethane skin sensitization according to Magnusson/Kligman (maximization test) species: guinea-pig results: negative classification: no irritation of skin method: guideline for testing OECD 406 study of a comparable product
Subacute, subchronic and long-lasting toxicity:	thermoplastic polyurethane no data available
Carcinogenicity:	thermoplastic polyurethane no data available
Reproductive toxicity, fertility:	thermoplastic polyurethane no data available
Reproductive toxicity, teratogenicity:	thermoplastic polyurethane no data available
Genotoxicity in vitro:	thermoplastic polyurethane type of test: test for salmonella/microsomes (Ames-Test) results: no signs of mutagenic effects method: guideline for testing OECD 471 study of a comparable product
Genotoxicity in vivo:	thermoplastic polyurethane no data available
STOT - single exposure:	thermoplastic polyurethane according to available data, the classification criteria are not met
STOT - repeated exposure:	thermoplastic polyurethane no data known
Aspiration toxicity:	thermoplastic polyurethane no data available
CMR assessment:	thermoplastic polyurethane carcinogenicity: no data available mutagenicity: according to available data, the classification criteria are not met teratogenicity: no data available reproductive toxicity, fertility: no data available

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SECTION 12: ECOLOGICAL INFORMATION

Ecological tests on product are not submitted. Avoid getting into the soil, into bottom and surface water or into waste water. Information that are available:

12.1 Toxicity

Acute toxicity for fish: thermoplastic polyurethane
EC50 > 100 mg/l
species: Danio rerio (the zebrafish)
exposition time: 96 hours
method: testing according to the regulation 92/69/EHS
study of a comparable product

Chronic toxicity for fish: thermoplastic polyurethane
no data available

Acute toxicity for *Daphnia*: thermoplastic polyurethane
EC50 > 100 mg/l
species: *Daphnia magna*
exposition time: 48 hours
method: testing according to the regulation 92/69/EHS
study of a comparable product

Chronic toxicity for *Daphnia*: thermoplastic polyurethane
no data available

Acute toxicity for algae: thermoplastic polyurethane
finish: inhibition of grow
species: *Scenedesmus subspicatus*
exposition time: 72 hours
method: guideline for testing OECD 201
no toxic effects of saturated solution
study of a comparable product

Acute toxicity for bacteria: thermoplastic polyurethane
EC50 > 10.000 mg/l
type of test: inhibition of breathing
type: activated sludge
exposition time: 3 hours
method: guideline for testing OECD 209
study of a comparable product

12.2 Persistence and degradability

Biological degradability thermoplastic polyurethane
biological degradation: 1 %, 28 days, ie. not easily degradable
method: tested according to the regulation 92/69/EHS
study of a comparable product

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Other adverse effects

No data available.

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SECTION 13: DISPOSAL CONSIDERATIONS

Disposal in compliance with all applicable international, national and local laws, regulations and statutes. For disposal within the EU, the European Waste Catalog (EWC) is so far a valid waste disposal key.

13.1 Waste treatment methods

The product is suitable for the industrial recycling. After reprocessing it is possible to melt the material and use again. The prerequisite of industrial recycling persists in material-specific collection and species-pure utilization.
Do not pour out in the waste water.

SECTION 14: TRANSPORT INFORMATION

According to: ADR, RID, AND, IMDG, IATA/ICAO.

14.1 UN number

Not regulated.

14.2 UN proper shipping name

Not regulated.

14.3 Transport hazard class

Not regulated.

14.4 Packing group

Not regulated.

14.5 Environmental hazards

Not regulated.

14.6 Special precaution for user

See Section 6-8.

Other warning:

Not regulated as dangerous goods for transport.
Slightly odorous. Protect from the moisture.
Store separately from foodstuff.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

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SECTION 15: REGULATORY INFORMATION

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

Water pollution class (Germany): non-threatening water (in compliance with Annex I of VwVWS)

15.2 Chemical safety assessment

No chemical safety assessment was performed for this substance/mixture or its components.

SECTION 16: OTHER INFORMATION

Complete verbatim text in Sections 2, 3 and 10 warns of danger according to CLP-hazard classification (1272/2008/EG).

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.

The information is published in the best knowledge and information of the company. The final usage of the product must be assessed by the user. The company is not responsible for any risks caused by incorrect handling or processing.