

Safety Data Sheet

According to EU Directive 1907/2006

Product name: TPU

Date of issue: 31-05-2018

Version: 1.2

1. Identification of the substance/preparation and of the company

1.1 Trade name:

TPU

1.2 Use of the product:

HBOT3D Filament

1.3 Supplier:

3D Printers sp. z o.o.
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2. Hazards identification

2.1 Classification of the substance or mixture

According to Regulation (EC) No. 1272/2008 [CLP]
No need for classification according to GHS criteria for this product.

2.2 Label elements

Globally Harmonized System, EU (GHS)
The product does not require a hazard warning label in accordance with GHS criteria.
The product does not require a hazard warning label in accordance with EC Directives, the dangerous ingredients are fixed in a polymer matrix.

2.3 Other hazards

According to Regulation (EC) No. 1272/2008 [CLP]
No specific dangers known, if regulations/notes for storage and handling are considered.

3. Composition/information on ingredients

3.1 Substances

Not applicable.

3.2 Mixtures

Polymer based on: polyurethane, stabilizin agents, additives.
Does not contain any hazardous ingredients according to Regulation (EC) No. 1272/2008

4. First aid measures

4.1 Description of first aid measures

On skin contact:
Burns caused by molten material require hospital treatment.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms:
No significant reaction of the human body to the product known.
Hazards:
No hazards anticipated.

4.1 Indication of any immediate medical attention and special treatment needed

Treatment:
Treat according to symptoms (decontamination, vital functions), no known specific antidote.

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5. Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Water, foam, dry chemical powder, carbon dioxide fire extinguishers.

5.2 Special hazards arising from the substance or mixture

Carbon dioxide, carbon monoxide, hydrogen cyanide; hydrocyanic acid, nitrogen oxides, isocyanate. The substances/groups of substances mentioned can be released in case of fire.

5.3 Advice for fire fighters

Protective equipment:

Self contained breathing apparatus (SCBA).

Further information:

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

No special precautions necessary.

6.2 Environmental precautions

No special precautions necessary.

6.3 Methods and materials for containment and cleaning up

Sweep up and contain spilled material if possible. High risk of slipping.

6.4 Reference to other sections

Refer to section (8).

7. Handling and storage

7.1 Handling

Provide suitable exhaust ventilation at the drying process and in the area surrounding the melt outlet of processing machines. Protection against fire and explosion: No precautions necessary.

7.2 Conditions for safe storage, including any incompatibilities

Segregate from foods and animal feeds. Suitable material for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE), paper, board.

Further information on storage conditions: Keep container tightly closed. Protect against moisture.

8. Exposure controls/personal protection

8.1 Control parameters

Componentis with occupational exposure limits. The substances mentioned are contained only in traces in the product. 101-68-8: 4,4'-Methylenediphenyl diisocyanate.

Biological Limit Values: Not established.

DNEL: The obligation to register acc. to the REACH Regulation (EC) No. 1907/2006 does not apply to polymers.

PNEC: The obligation to register acc. to the REACH Regulation (EC) No. 1907/2006 does not apply to polymers.

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8.2 Exposure controls

Eye protection:

Not required.

Hand protection:

Not required.

Respiratory protection:

Breathing protection if breathable aerosols/dust are formed.

Hygiene measures:

Wearing of closed work clothing is recommended. When using do not eat, drink or smoke.

Hands and/or face should be washed before breaks and at the end of shift. At the end of the shift the skin should be cleaned and skin-care agents applied.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|--|
| Appearance: | Flexible solid filament |
| Odour: | Odourless |
| Colour: | Depending on product grade |
| Odour threshold: | Not determined |
| pH: | Not applicable |
| Softening temperature: | >120°C |
| Initial boiling point and boiling range: | The product is a non-volatile solid |
| Flash point: | Not applicable |
| Evaporation rate: | Not applicable |
| Flammability (solid, gas): | Flammable |
| Upper flammability or explosive limit: | For solids not relevant for classification and labelling |
| Lower flammability or explosive limit: | Not applicable |
| Vapour pressure: | Not applicable |
| Vapour density: | Not applicable |
| Relative density: | Ca. 1.1-1.2 g/cm ³ (20°C) |
| Bulk density: | Ca. 600 kg/cm ³ as granules |
| Solubility(ies): | Practically insoluble |
| Partition coefficient (n-octanol/water): | Not available |
| Auto-ignition temperature: | > 400°C |
| Decomposition temperature: | > 230°C |
| Viscosity: | Not applicable |
| Explosive properties: | Not explosive |
| Oxidizing properties: | Not oxidizing |

10. Stability

10.1 Reactivity:

Stable under normal handling and storage conditions. No corrosive effect on metal.

10.2 Chemical stability:

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions:

No hazardous reactions observed under normal handling and storage conditions.

10.4 Conditions to avoid:

While printing, keep away from sparks and open flame. Exposure to elevated temperatures can cause product to decompose.

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10.5 Incompatible materials:

No known.

10.6 Hazardous decomposition products:

Possible decomposition products on thermal decomposition carbon monoxide, carbon dioxide, hydrogen cyanide; hydrocyanic acid isocyanates, nitrogen oxides.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

Assessment of acute toxicity: Virtually nontoxic after single skin contact. Virtually nontoxic by inhalation. Virtually nontoxic after single ingestion. Experimental/calculated data: LD50 rat (oral): > 5.000 mg/kg. The product has not been tested. The statement has been derived from substances/products of similar structure or composition.

Irritation:

Assessment of irritating effects: Not irritating to eyes. Not irritating to skin. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Respiratory/skin sensitization:

Assessment of sensitization: The chemical structure does not suggest a sensitizing effect.

Germ cell mutagenicity:

Assessment of mutagenicity: The chemical structure does not suggest a specific alert for such an effect.

Carcinogenicity:

Assessment of carcinogenicity: The chemical structure does not suggest a specific alert for such an effect.

Reproductive toxicity:

Assessment of reproduction toxicity: The chemical structure does not suggest a specific alert for such an effect.

Developmental toxicity:

Assessment of teratogenicity: The chemical structure does not suggest a specific alert for such an effect.

Specific target organ toxicity (single exposure):

Assessment of STOT single: Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure):

Assessment of repeated dose toxicity: Repeated exposure to the substance by dermal administration leads to effects similar to those found after single exposure. Repeated exposure to the substance by inhalative administration leads to effects similar to those found after single exposure. Repeated exposure to the substance by oral administration leads to effects similar to those found after single exposure.

Aspiration hazard:

No aspiration hazard expected.

12. Ecological information

12.1 Toxicity

Not expected to be acutely toxic, but material in pellet or bead form may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

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12.2 Persistence and degradability

Assessment biodegradation and elimination (H₂O): Poorly biodegradable.
Elimination information: Poorly biodegradable.

12.3 Bioaccumulative potential

To avoid bioaccumulation plastics should not be disposed in the sea or in other waterbodies.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria.

12.6 Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete ozone layer.

12.7 Additional information

Adsorbable organically-bound halogen (AOX): This product contains no organically-bound halogen.

13. Disposal considerations

13.1 Waste treatment methods

Can be used without re-conditioning. May be disposed of or combusted with domestic refuse according to local regulations.

Waste key:

07 02 13 waste plastic.

Contaminated packaging:

Completely emptied packagings can be given for recycling.

14. Transport information

Product has been classified as being non-dangerous substance according to transport regulations ADR, RID, IMDG, IATA/ICAO.

14.1 UN number:

Not applicable.

14.2 UN proper shipping name:

Not applicable.

14.3 Transport hazard class(es):

Not applicable.

14.4 Packing Group:

Not applicable.

14.5 Environmental hazards:

No additional data is available.

14.6 Special precautions for user:

No data available.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not evaluated.

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15. Regulatory information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2 Chemical Safety Assessment

The obligation to register acc. to the REACH Regulation (EC) No. 1907/2006 does not apply to polymers.

16. Other information

Information is referenced from other manufactureres.

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

This safety data sheet complies with the requirements of Regulation (EC) No. 1997/2006 and Regulation (EC) No. 2015/830. Label element according to Regulation (EC) No. 1272/2008.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be cosidered a warranty or quality specification. The information relates only to specific material designated and may not be valid for such material used in a combination with any other materials or in any process, unless specified in the text.