Material Safety Data Sheet

TPU-64D

SECTION 1: Hazards Identification

1.1 Classification of the product
The fibres are an article and do not contain hazardous substances above classification limits set by CLP Regulation 1272/2008/EC and Directive 67/548/EEC.

1.2 Label elements
Not required

1.3 Other hazards
When utilised as intended no specific hazards or adverse health effects have so far become apparent. Molten polymer will produce thermal burns. Polymer dust may represent a slip hazard.

SECTION 2: Composition/information on ingredients

2.1 Chemical identity of the article (The following information serves as guidance for the entire range of diameters and colors)

Composition:
Fibre based on polyurethane, possibly prepared with a colour agent The polymer contains minor additives such as stabilizers and additives. These additives are immobilized by the polymer and are not released with normal use.

Hazardous ingredients (according to EG 1272/2008):
Reaction mass from Bis(1,2,6,6-pentamethyl-4-piperidyl)-sebacate and Methyl-1,2,2,6,6-pentamethyl-4-piperidyl-sebacate
Content (weight %) ≥ 0,1% - < 1 % REACH-registration No.: 01-2119491304-40 Skin Sens. 1A, Aquatic Chronic 1, Aquatic Acute 1 H317, H400, H410
Complete wording can be found in paragraph 16.

SECTION 3: First aid measures

3.1 Description of first aid measures

After Inhalation
Move exposed person to fresh air in case of accidental inhalation of dust, airborne fibres or fumes from overheating or combustion. Consult a physician after significant exposure and occurrence of symptoms.

After contact with skin:
Cool skin rapidly with cold water after contact with molten polymer. Do not peel polymer from the skin. Obtain medical attention.

After contact with eyes:
The eyes should be immediately flushed with plenty of water for at least 20 minutes. Get medical attention if symptoms occur.

After ingestion:
Never give anything by mouth to an unconscious person. Do not induce vomiting unless directed by medical personnel. Get medical attention if symptoms occur.

3.2 Most important symptoms and effects, both acute and delayed
No risks expected. Special reactions of the human body caused by the product have not been reported.

3.3 Evidence of direct medical aid or special treatment
Treatment of symptoms (decontamination, vital functions)
SECTION 4: Firefighting measures

4.1 Extinguishing media
Suitable:   water spray jet, foam, CO2, extinguishing powder
Not suitable:  Full water jet; water, if fire is caused by an electrical short circuit.

4.2 Special hazards arising from the fibres
In case of fire, the hazardous combustion gases are carbon monoxide, carbon dioxide, hydrocyanic acid, nitrogen oxides, isocyanate

4.3 Advice for firefighters
Special protective equipment for fire-fighters
Wear self-contained breathing apparatus, protective clothing and headgear to prevent contact with skin and eyes. Dispose of residues and contaminated water according to local regulations.

SECTION 5: Accidental release measures

5.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation Spillages may be slippery. Clear up spillages. No special measures necessary.

5.2 Environmental precautions
No special measures necessary.

5.3 Methods and material for containment and cleaning up
Collect the product mechanically.

SECTION 6: Handling and storage

6.1 Precautions for safe handling
Ensure adequate ventilation and aspiration at drying and processing machines.

6.2 Conditions for safe storage, including any incompatibilities
Keep away from foodstuffs, drinks and tobacco and feeding stuff. All supply units are to be secured in storage, especially when stacking, so that they are not damaged by shifting or falling down, and to prevent injury. Regarding thermal load, fire safety requirements must be observed.
Keep containers closed when not in use. Store in original container in a dry, cool and well-ventilated area. Storage class (German TRGS 510) 11 flammable solids

SECTION 7: Exposure controls/personal protection

7.1 Control parameters
Occupational exposure limits: following materials are only contained in traces

CAS  101-68-8   4,4'-Methylendiphenyldiisocyanate Diphenylmethan-4,4'-diisocyanate
AGW 0,05 mg/m³ (TRGS 900 (DE)), smoke and aerosol peak limit/violation of limit factor:=2= Sum of steam and aerosol. The limit at the workplace (AGW) is valid only for the monomers. To assess oligomers, polymers please confer to TRGS 430 (DE), „Isocyanate”
Factor of short time exposition: (TRGS 900 (DE)), smoke and aerosol peak violation of limit factor: 1 Material, listed with violation of limit and category for short time exposure
Classification of short time exposure: (TRGS 900 (DE)), smoke and aerosol
Category I: materials where local effects determine the limit or materials sensitizing the respiratory tract Classification of short time exposure: (TRGS 900 (DE)), respirable fraction
Category I: materials where local effects determine the limit or materials sensitizing the respiratory tract limit at the workplace (AGW) 0,05 mg/m³ (TRGS 900 (DE)), respirable fraction peak limit/violation of limit factor :=2= sum of steam and aerosols. The limit at the workplace (AGW) is only valid for the monomers To assess oligomers, polymers confer TRGS 430 (DE), „Isocyanate”
Factor of short time exposition: (TRGS 900 (DE)), respirable fraction peak limit/violation of limit factor: 1 Material, listed with violation of limit and category for short time exposure.
Effect on skin (TRGS 900 (DE)), respirable fraction. Material can be incorporated via skin.

PNEC There is no obligation to register polymers according to REACH EG 1907/2006.
DNEL There is no obligation to register polymers according to REACH EG 1907/2006.
7.2 Personal protective equipment

Skin protection:
Appropriate footwear and working clothes must be worn. Protective Gloves must be used when handling hot polymer.

Eye protection:
Not required under normal conditions of uses.

Respiratory protection:
If inhalation of dust can be avoided no further precautions are required.

Hygiene at work:
The general requirements for industrial hygiene are to be observed. Wash hands thoroughly before eating or smoking and after work use soap and water. Regular cleaning of machines, working areas and clothes must be conducted.

8.1 Information on basic physical and chemical properties

**Appearance:** monofilament

**Aggregate state:** solid

**Smell:** none

**Softening temperature:** 180°C to 210°C

**Flash point:** not applicable

**Density:** 1.1 – 1.2 g/cm³

**Vapour pressure:** not applicable

**Solubility in water (20°C):** insoluble

**Solubility in solvents:** Not determined

**Temperature of decomposition:** > 230°C

8.2 Other Information
None

SECTION 9: Stability and reactivity

10.1 Reactivity
Product is not reactive at standard use, storing and transportation conditions.

10.2 Chemical stability
Chemically stable

10.3 Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid
None to expect

10.5 Incompatible materials
None known of

10.6 Hazardous decomposition products
In case of a fire or strong overheating of the material gaseous decomposition products may be formed: Carbon monoxide, carbon dioxide, hydrocyanic acid, nitrogen oxides, isocyanate
SECTION 10: Toxicological information

10.1 Information on toxicological effects
The intended use of the fibre product has not been known to create adverse health effects.

Acute Toxicity
virtually not toxic by singular contact with skin, singular inhalation and singular ingestion.

Potential acute health effects

Inhalation:
sensitization possible, can then provoke allergic reactions.

Ingestion:
No known significant effects or critical hazards.

Skin contact:
not irritating, sensitization possible, can then provoke allergic reactions.

Eye contact:
not irritating.

Delayed and immediate effects and also chronic effects from short and long term exposure

Carcinogenicity: The chemical structure does not support any suspicion of an effect.
Genotoxicity: The chemical structure does not support any suspicion of an effect.
Teratogenicity: The chemical structure does not support any suspicion of an effect.
Fertility effects: The chemical structure does not support any suspicion of an effect.

Specific target toxicity

Short term exposure
Based on available data no specific target toxicity must be expected.

Long term exposure
Neither a repeated dermal, nor an intake by inhalation nor a repeated ingestion produced effects exceeding short time exposure.

SECTION 11: Ecological information

11.1 Toxicity
With high probability not noxious to waterborne organisms.

11.2 Persistence and degradability
Difficult to biodegrade.

11.3 Bioaccumulative potential
Does not accumulate considerably.

11.4 Mobility in soil
Test on adsorption to soil not possible due to product properties.

11.5 Result of PBT and vPvB assessment
Product does not contain substances which comply to PBT criteria.

11.6 Other adverse effects
Product does not contain substances listed in EG 2037/2000 to degrade the ozone layer.

SECTION 12: Disposal considerations

12.1 Waste treatment methods
Product can be re-used without reprocessing steps.
Where recycling is not possible, the article may be landfilled in compliance with local regulations or burned in suitable incineration plants.

EU waste code 07 02 13 polymer waste
This material and its packaging must be disposed of in a safe way and should be recycled.
Material Safety Data Sheet
TPU-64D

SECTION 13: Transport information

14.1 GGVS/IMDG Code:
Non-hazardous substance

14.2 GGVS, RID/ADR:
Non-hazardous substance

14.3 ADNR:
Non-hazardous substance

14.4 ICAO/IATA-DGR:
Non-hazardous substance

14.5 Additional information
Marine pollutant – IMDG: no

SECTION 14: Regulatory information

15.1 EU legislation
The fibre article is not subject to classification according to EC directives.

Water pollution class (WGK):
Not a water hazard according to § 19g Section 5 WHG (Water Resources Act) as well as in accordance with VwVwS (Administrative Regulations for Water Polluting Substances): Identification Code 766 (plastics, granules, for example, molded parts, fibres, films, plastic resins, as far as these are solid, not dispersed, insoluble in water and indifferent)

15.2 Chemical Safety Assessment
Not necessary as EG 1907/2006 is not valid for polymers

SECTION 15: Other information

16.1 Miscellaneous
Complete wording of the classifications

Skin Sens. Sensitization of skin
Aquatic Chronic water pollutant - chronic
Aquatic Acute water pollutant – acute
H317 May cause an allergic skin reaction
H400 Very toxic to aquatic life
H410 Very toxic to aquatic life with long lasting effects.

The information in this data sheet relate solely to the fibre articles described herein, and are not to be used in combination with any other substance or preparation or product or in any other procedure.

The purpose of this data sheet is the protection of humans and the environment on the basis of information provided to the commercial users of chemical fibres. It is not intended for private consumers.

In the event that the article is intended for usage in specific applications, such as for example, the food industry, the hygiene, medical or surgical sector, please contact the manufacturer first.

The information in this data sheet reflect the current knowledge of the party completing the form at the date of issue. These are not contractually binding guarantees of article properties.

*) The synthetic fibre is an article and not subject to the European Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). Safety Data Sheets or chemical safety reports under Article 31 or rather Article 14 of this act are therefore not necessary. This data sheet was voluntarily created in line with Annex II to this regulation under the aspect of Responsible Care.

SECTION 16: Emergency contact

Contact:
Contact person: Michael Elstner
Phone: +49 89 2488986 – 0
Mail: emergency@germanreprap.com