

Standard Print Co.

TPU Material Safety Data Sheet (MSDS)

1. Chemical Product/Manufacturer Identification

Product identifier:	Standard Print Co TPU. Standard Print Co. uses an agent company to manufacture this filament on its behalf
Other means of identification:	Synthetic Thermoplastic Polymer
Use of the product:	Engineered Plastic for FDM 3D Printing
Details of manufacturer or importer:	Standard Print Company PTY LTD Suite 5, 1-5 Woodburn St, Redfern, 2016, New South Wales, Australia.
Emergency phone number:	Standard Print Co., +61 419 496 599 (Office Hours Only)

2. Hazards Identification

Classification:	This material is not listed as being hazardous according to Work Safe Australia's Hazardous Chemical Information System (HCIS)
Special advice on hazards:	Danger of burns in contact with hot polymer. Hazardous vapours in case of burning or heating to molten state. Do not heat above 230°C. Print in well ventilated area See 10. Respiratory Protection

3. Composition and Information of Ingredients

This material is not classified as hazardous according to Work Safe Australia's Hazardous Chemical Information System (HCIS). This classification is based on the most current data available to us. It is the user's responsibility to determine the safety and suitability of this material for their specific application.

Chemical characteristics:	Thermoplastic Polyurethane	> 90%
	Proprietary Filler	< 10%
CAS no:	Proprietary	

4. First-Aid Measures

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Skin contact:	In case of contact with molten polymer immediately cool the skin with cold water. Do not attempt to peel polymer from skin. Medical aid may be required to remove adhering material and for treatment of burns.
Inhalation:	After inhalation of decomposition gases or dust remove patient to fresh air. Contact a physician and treat symptomatically.
Ingestion:	Rinse mouth with water and drink more water. Contact a Physician and treat symptomatically.
Eye contact:	Rinse open eyes thoroughly with water. Contact a Physician and treat symptomatically.

5. Fire-Fighting Measures

Auto ignition temperature:	Not tested
Extinguishing Media:	Foam, Water, Dry chemical, Carbon Dioxide.
Specific Hazards under fire:	Powdered material may form explosive dust-air mixtures. In case of ignition or explosion, do not breathe fumes.
Specific fire-fighting measures :	Move container from fire areas if it can be done without risk. Keep personnel removed from and upwind of fire. Evacuate non-essential personnel to safe area. Fire-fighters should wear proper protective equipment and self contained breathing apparatus - MSHA/NIOSH (approved or equivalent).
Other information:	Fine particulate of the material dispersed in air may ignite. Risks of ignition followed by flame propagation or secondary explosions shall be prevented by avoiding accumulation of dust. Apply water from a safe distance to cool and protect surrounding area.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:	Avoid dust formation and static discharge. Do not overheat material.
Measures for environmental effects:	Do not wash away into shower or waterway.
Methods and materials for containment and cleaning up:	If pellets are released in environment, take adequate steps to prevent aquatic animals and birds from eating pellets. Sweep up, place in a bag and hold for waste

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disposal. Sweep up spilled pellets on road or floor to avoid tripping.

Preventive measures for secondary accident: Shut off all sources of ignition; No flares, smoking or flames in area.

7. Handling and Storage

Handling: Local ventilation / Total air ventilation :
Good ventilation required when TPU is heated to a molten state.

Safety treatments: Do not keep this material under high temperature condition for a long time.
Do not touch high temperature resin
TPU can generate static electricity, so take countermeasures to eliminate static electricity if necessary

Safety Measures/Incompatibility: Do not empty into drains. Do not drop onto, or slide across sharp objects. Avoid rough handling or dropping

Recommendations for Storage: This material is flammable. Follow fire defence and local regulations for storage and handling. Keep away from heat. Keep away from sources of ignition—No smoking. Keep away from heat source, steam pipe and direct sunlight. Store in cool (below 50°C), dry conditions in well sealed containers. Material is hygroscopic – Keep in sealed container with desiccant or other hygroscopic substances to ensure the material remains in a dry state for optimal performance

Stability and Reactivity: Chemically stable under normal conditions of use and storage.

No data available on bio accumulative potential.

Disposal considerations: This product is currently accepted as being non-recyclable within Australia via curbside collection check local regulations for details. Spools storing this product are currently non-recyclable within Australia but can be reused. Dispose of unused material via registered waste carriers.

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8. Exposure Control and Personal Protection

Exposure limits:

If processing conditions exceed recommended guidelines, elevated levels of isocyanate vapours may be released. Over-exposure to these vapours poses a risk of respiratory irritation and sensitization, which could manifest as delayed symptoms like difficulty breathing, coughing, and asthma. Individuals who are hypersensitive to isocyanates may experience these symptoms even at low concentrations.

Standard Name	Exposure Standard Synonym	CAS Number	Time Weighted Average (mg/m ³)	Short Term Exposure Limit (mg/m ³)
Isocyanates, all (as-NCO)	N/A	*	0.02	0.07

Source: [Safe Work Australia's Health Monitoring Guide for Isocyanates](#)

* For more information on specific isocyanates and their corresponding CAS Numbers, please refer to Safe Work Australia's [HCIS Database](#).

Ventilation Control

Install effective fresh-air and exhaust ventilation systems at points where vapours may be generated to ensure compliance with tolerance limits

Biological limit values:

Not established

Recommended monitoring procedures:

Regularly monitor air quality to ensure compliance with Safe Work Australia's exposure standards for isocyanates. Isocyanates are not normally detected by odour until the concentration reaches 10 to 20 times the exposure standard. To determine the airborne concentrations of isocyanates, HSE (1) and NIOSH (2) methods are available

Derived no effect level (DNEL)

No information available

Appropriate Engineering measures:

When processing, good ventilation is required to exclude dust, fumes and gases. Dust emission data not currently available

Personal protective equipment:

In case of insufficient ventilation and fume extraction, wear suitable respiratory equipment. Against powder-dust: protective mask for powder-dust Against gas from molten polymer: protective mask for organic gas

Respiratory protection:

If engineering controls do not maintain airborne concentrations below recommended exposure limits

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(when applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be used. Respirator type: air-purifying respirator with an appropriate government-approved (where applicable) air-purifying filter, cartridge, or canister. Contact a health and safety professional or manufacturer for specific information.

Hand protection:

Not required (for FDM printing). Wear suitable heat-resistant gloves when handling hot or molten polymer and heated elements of the printer.

Eye protection:

Not required (for FDM printing). Wear protective eyeglasses or chemical safety goggles when handling molten filament or when post processing filament.

Skin and body protection:

Not required (for FDM printing). Wear long-sleeve clothing so as not to touch skin directly with molten filament.

Hygiene measures:

Hand in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product.

Environmental exposure controls:

Do not allow product to enter drains, water courses or soil.

9. Physical and Chemical Properties

Appearance:	Solid Filament
Density:	1.1-1.2 g/cm ³
Colour:	Variable
Odour:	Nearly odourless when heated
pH	Not available
Glass transition temperature:	-65°C
Boiling Point:	Not available
Melting Point:	>200°C
Thermal Decomposition Temperature:	>230°C. Thermal stability not tested. Low stability hazard expected at normal printing temperatures
Auto ignition temperature:	Not available

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Flashpoint:	Not available
Solubility in water:	Not available
Solubility in other solvents:	Not available
Vapour pressure:	Not available

10. Stability and Reactivity

Reactivity:	Not reactive under normal handling conditions.
Chemical Stability:	Stable for handling under normal handling conditions.
Possibility of Hazardous reactions:	No hazardous reactions with other chemicals known under normal handling conditions.
Conditions to avoid:	Do not grind, pelletize or mill the material. Avoid temperatures printing above 260°C.
Incompatible Materials:	Material can react with strong oxidizers and bases
Hazardous decomposition products:	Hazardous decomposition products may form under fire conditions: Gases Carbon monoxide (CO) and Carbon dioxide (CO ₂), nitrogen oxides; amines, nitriles, aliphatic and aromatic hydrocarbons, aldehydes, ketones, acids, hydrogen cyanide and isocyanates are also formed

11. Toxicological Information

Acute toxicity:	Not tested (not to be expected)
Skin corrosion/irritation:	Not tested (not to be expected)
Serious eye damage/eye irritation:	Not tested (not to be expected)
Respiratory or skin sensitization:	If processing conditions exceed recommended guidelines, elevated levels of isocyanate vapours may be released. Over-exposure to these vapours poses a risk of respiratory irritation and sensitization, which could manifest as delayed symptoms like difficulty breathing, coughing, and asthma. Individuals who are hypersensitive to isocyanates may experience these symptoms even at low concentrations.

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Germ cell mutagenicity:	Not tested (not to be expected)
Carcinogenic effects:	Not tested (not to be expected)
Toxicity for reproduction:	Not tested (not to be expected)
Specific Target Organ/Systemic Toxicity (Single Exposure):	Not tested (not to be expected)
Specific Target Organ/Systemic Toxicity (Repeated Exposure):	Not tested (not to be expected)
Aspiration hazards:	Not tested (not to be expected)

12. Ecological Information

Aquatic toxicity:	No information
Persistence and degradability:	Minimal degradation
Bioaccumulation potential:	No information
Mobility in soil:	No information
Results of PBT and vPvB assessment:	No information
Other adverse effects:	No adverse effects known to date.
Additional ecotoxicological information:	The material is practically non-soluble in water being solid. Therefore, under environmental conditions, no detrimental effects on plants, animals and micro-organism are to be expected. This product is not readily biodegradable.

13. Disposal Consideration

Waste treatment methods:	Dispose to an authorized waste collection point in accordance with local regulations.
Packaging:	Dispose of in accordance with local regulations.

14. Transport Information

International transport guidelines:	Not Listed
Specific safety measures and conditions on transport:	Store in cool, dry conditions out of direct sunlight. Handle with care as to avoid damaging of outer packaging material.

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15. Other Information/References

The information relates to this specific material. It may not be valid for this material, if used in combination with any other materials or in any process. It is the user's responsibility to satisfy him-selves as to the suitability and completeness of this information for his own particular use.

The information herein is given in good faith, but no warranty, express or implied, is made.

This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It is advised to make their own tests to determinate the safety and suitability of each such product or combination for their own purposes.

NOTICE REGARDING MEDICAL APPLICATION RESTRICTIONS: The company does not recommend any of its products, including samples, for use: (A) in any application which is intended for any internal contact with human body fluids or body tissues (B) as a critical component in any medical device that supports or sustains human life; and (C) specifically pregnant women or in any applications designed specifically to promote or interfere with human reproduction.

Date of issue : 3/06/2019