

HIPS

MATERIAL SAFETY DATA SHEET (MSDS)

VERSION: 1.1 - 2020

PREPARED BY:
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Standard Print Co.

HIPS Material Safety Data Sheet (MSDS)

1. Chemical Product/Manufacturer Identification

Product identifier:	Standard Print Co HIPS. Standard Print Co. uses an agent company to manufacture this filament on its behalf
Other means of identification:	High impact polystyrene Butadiene-styrene copolymer
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 280°C. Print in well ventilated area See 10. Respiratory Protection

3. Composition and Information of Ingredients

Chemical characteristics:	Engineered plastic based on Butadiene-styrene copolymer		
CAS no:	CAS Number. 9003-55-8	Identifier Butadiene-styrene copolymer	Hazzard/Risk None Known
Composition	CAS Number. 9003-55-8	Identifier Butadiene-styrene copolymer	Composition >90%

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- Additives & colourants <10%

4. First-Aid Measures

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:	466°C
Extinguishing Media:	Use water (mist or light spray at first), CO2, dry chemical powder or foam to extinguish fires.
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). Alcohol resistant foams are preferred if available. General-purpose synthetic foams (including AFFF) or protein foams may function, but are much less effective. Cool containers/tanks with spray water. Water mist may be used to cool closed containers.
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.

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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 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:	For operations where eye or face contact can occur, eye protection is recommended. Avoid breathing dust, wear a respirator with dust filter if exposed to dust. Wash hands thoroughly with soap and water after handling Hot and/or melted polymer can severely burn the skin – handle with care Extrude only in a well-ventilated area, the processing fumes may cause eye and respiratory tract irritation and in severe cases nausea and headache. Keep away from fire and sources of ignition. Never burn filament, toxic gasses and vapours will be generated if exposed to fire. If exposed to fumes from overheating or combustion leave contaminated area and breathe fresh air, seek medical attention if symptoms develop (at a later time).
Safety treatments:	Do not keep this material under high temperature conditions exceeding 280 °C for a long time. Do not touch high temperature resin. HIPS 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.

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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:	No information available
Biological limit values:	Not established
Recommended monitoring procedures:	No information 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:	If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. 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:	Extrude only in a well-ventilated area . If engineering controls do not maintain airborne concentrations below recommended exposure limits (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.

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9. Physical and Chemical Properties

Appearance:	Solid Filament
Density:	~1.05 g/cm ³
Colour:	Variable
Odour:	Noticeable when heated
pH	Not available
Glass transition temperature:	Approx. 80°C
Boiling Point:	Not available
Melting Point:	This product does not possess a specific melting point. It softens gradually over a wide temperature range.
Thermal Decomposition Temperature:	>280°C. Thermal stability not tested. Low stability hazard expected at normal printing temperatures
Auto ignition temperature:	440°C
Flashpoint:	>200°C
Solubility in water:	Negligible
Solubility in other solvents:	Limonene
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 280°C.
Incompatible Materials:	Material can react with strong oxidizers

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Hazardous decomposition products:

Hazardous decomposition products may form under fire conditions: Gases Carbon monoxide (CO) and Carbon dioxide (CO₂) Hydrogen cyanide (HCN), Hydrocarbons. Possible in traces: Acrylonitril, Acetophenone, Acrylmonomeres, Acrylcompounds, Styrene, Phenol

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:	Not tested (not to be expected)
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.

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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.

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.

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