

HIPS

Material Safety Data Sheet

1. Identification

Trade name	HIPS
Use	Filament for 3D printing
Company	Tesseract, Shop no.2, 196A Tara House, Dr. Viegas Street, Marine Lines, Mumbai - 400002
Telephone	+91 9930550709, +91 7977220865, +91 826841506

2. Hazards Identification

Instability	None
Incompatibility	Stable
Other hazards	Not known
Potentially acute health effects	
Eyes	Heated Polymer: Eye contact can cause serious thermal burns. Vapors formed when polymer is heated may be irritating to the eye.
Skin	No known acute effects. Heated Polymer: skin contact can cause serious thermal burns.
Inhalation	Negligible at room temperature. Nuisance dusts can be irritating to the upper respiratory tract. Irritating vapors may form when the polymer is processed at high temperatures

3. Composition\Ingredients

Composition	High impact polystyrene
Family	Polymer

Common Name	Hips
Chemical formula	$-(\text{CH}_2\text{CH}(\text{C}_6\text{H}_5)-)_n$

4. First Aid Measures

Inhalation	Move to fresh air and keep at rest in a position comfortable for breathing. Call a physician immediately if irritation persists.
Skin contact	Rinse immediately with plenty of water. If skin irritation persists, call a physician. Cool skin rapidly with cold water after contact with hot polymer.
Eye contact	Rinse immediately with plenty of water. Call a physician immediately.
Ingestion	Drink water as a precaution. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Call a physician immediately.
Notes to doctor	Treat symptomatically
Most important symptoms and effects, both acute and delayed	Burns should be treated as thermal burns. The material will come off as healing occurs; therefore immediate removal from skin is not necessary

5. Firefighting measures

Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures.

Extinguishing media	Small fire: Dry chemical extinguisher (ABC or AB). Use water spray or fog. Large fire: Use water spray or fog. May re-ignite itself after fire is extinguished.
Special hazards arising from the substance or mixture	Burning produces obnoxious and toxic fumes: carbon oxides (CO _x)
Advice for firefighters	Use self-contained breathing apparatus and full protective clothing

6. Accidental release measures

Personal precautions, protective	Avoid breathing gases released from
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equipment and emergency procedures	molten filament. Ensure adequate ventilation, especially in confined areas
Environmental precautions	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.
Methods and materials for containment and cleaning up	Allow to solidify molten material. Dispose of waste and residue according to local regulations

7. Handling and storage

Precautions for safe handling	Avoid contact with molten material
Conditions for safe storage, including any incompatibilities	Product should be stored in a dry and cool place at temperatures between -20°C to +25 °C. Avoid direct sunlight. Minimize moisture uptake by leaving it in a sealed package together with the supplied desiccant

8. Exposure controls/personal protection

Exposure limits	Not established.
Ventilation protection	Provide good ventilation during 3D printing processes.
Skin Protection	Avoid direct contact to the hot melt of material or wear gloves.
Eye and face protection	Use safety glasses if necessary
General	Wear protective clothing to prevent contact with hot melt materials.

9. Physical and chemical properties

Form	Filament (solid at room temperature)
Color	Various
Odor	Odorless
Flash point	404°C
Ignition temperature	466°C
Thermal decomposition	Hazardous combustion products are CO, HCN, AN, SM & NO
Melting point/range	>100 °C

Specific Gravity	1.055g/cc
Water solubility	Negligible
Solubility in other solvents	-

10. STABILITY AND REACTIVITY

Reactivity	No dangerous reaction known under conditions of normal use.
Chemical stability	Stable
Possibility of hazardous reactions	No decomposition or hazardous reactions if stored and applied as directed
Conditions to avoid	Print temperatures above 230 °C (at standard printing speeds)
Incompatibility	Oxidizing agents and strong bases
Hazardous decomposition products	Burning produces obnoxious and toxic fumes: CO _x , HCN, AN, SM & NO _x

11. TOXICOLOGICAL INFORMATION

Routes of entry	N.A
Acute toxicity	Not likely to cause targeted organ effects or skin allergic reactions

12. Ecological information

Toxicity	No data available
Persistence and degradability	No data available
Bioaccumulation	Substance is not expected to bioaccumulate through food chains in the environment
Mobility in soil	Low
Results of PBT and vPvB assessment	No data available
Other adverse effects	No data available

13. Disposal Considerations

Waste treatment methods	In accordance with local and national regulations
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14. TRANSPORT INFORMATION

ADR/RID	No data available
ADN/ADNR	No data available
IMDG	Not controlled under IMDG
IATA-DGR	Not controlled under IATA

15. REGULATORY INFORMATION

US Regulations	
SARA 301/302/303	Not hazardous
SARA 304	Listed. Does not require reporting under the requirement of 40 CFR 355, Emergency Planning And Notification.
SARA 313	Listed
SARA 311/312	Not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard. Does not require reporting under the requirement of 40 CFR 370
Other Inventories	
WHMIS (Canada)	Not controlled under WHIMS (Canada)
DCL (EEC)	Not classified according to EU legislation
CEPA DSL/NDSL	Listed or exempted
Australia Inventory (AICS)	Listed or exempted
China Inventory (IECSC)	Listed or exempted
Japan inventory (ENCS)	Listed or exempted
Japan inventory (ISHL)	Not determined
Korea inventory (KECI)	Listed or exempted
New Zealand Inventory of Chemicals (NZIoC)	Listed or exempted
Philippines inventory (PICCS)	Listed or exempted

16. OTHER INFORMATION

-The information in this Material Safety Data Sheet (MSDS) is based on current knowledge and experience. No liability can be assumed for the accuracy and completeness of this information.

-The information in this MSDS applies for this specific material only. It therefore does not apply for its usage in combination with other materials or ways of processing.

-Users should consider this information only as additional to other data gathered. Independent determination of suitability and completeness of information from all available sources is essential to ensure proper and safe use and disposal of these materials.

-This information is furnished without warranty, express, or implied. This information is believed to be accurate to the best of knowledge of Rever Industries.

-This information should help to make an independent determination of the methods to ensure proper and safe use and disposal of the filament