



MATERIAL SAFETY DATA SHEET

Z3D Nylon TP4611

Revision Date: 2014/10/09

Version: 1.0

1. Product and Company Identification

DING SHENG MATERIAL TECHNOLOGY COPORATION LIMITED

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Monofilament produced from Polyamide family resins

Product use: For use exclusively on FDM type 3D printers

2. Hazards Identification

Emergency Overview: Synthetic nylon fiber with no significant odor. Fiber is not hazardous at normal room temperature. Avoid heating material above 320 degrees Celsius. Exposed to fire will release irritating fumes and vapor. Always work with local ventilation. Wear protective clothing. Eyewash and safety showers should be easily accessible.

Potential Health Effects:

Eyes: Fine particles may cause eye irritation. Eyes should be washed immediately with clean water.

Skins: Fine particles may cause skin irritation.

Inhalation: Fine particles may cause irritation to mucous membranes. Seek medical attention if symptoms persist.

Ingestion: Product may cause gastric discomforts.

Acute toxicity:

Contact with molten product may cause thermal burns.

Product in monofilament form poses low hazards.

Irritation:

Thermal decomposition of the product may cause irritation to eyes, skin and respiratory tract.

Signs and symptoms of overexposure:

Data available do not indicate signify reaction to human body to the monofilament.

Potential environmental effect:**Aquatic toxicity:**

The product has not been tested. The product is not known to be acutely harmful to aquatic organisms.

Soil Degradation:

The product has not been tested. The product is inert and not known to be soil degradable.

3. Ingredient and Composition

<u>CAS Number</u>	<u>Content Weight</u>	<u>Chemical Name</u>
24993-04-02	> 99.0 %	Polyamide 6/66
105-60-2	> 0.01 - <1.0 %	Caprolactam

4. First-Aid Measures:

General Advice: Remove contaminated clothing.

Skin: Not likely to be hazardous. For irritation, rinse with running fresh water. If burns result from contact with molten material, rinse immediately

with cool running water.

Eye: If irritation occurs, rinse with fresh water. Seek medical attention if conditions persist.

Inhalation: If irritation occurs, remove to fresh air. Seek medical attention if conditions persist.

Ingestion: Seek medical attention.

Advice to physicians: There are no known chronic effects associated with this material.

5. Fire Fighting Measures:

Flammable Properties:

Flash Ignition Temperature:	400 degrees Celsius
Flash Point Method: (ASTM D1929)	Not applicable
Auto-Ignition Temperature:	400 degrees Celsius
Upper Flame Limit:	Not applicable
Lower Flame Limit:	Not applicable
Flame Propagation Rate (solids):	Not applicable
OSHA Flammability Class:	Not applicable, solid material
Extinguishing Media:	Use any standard agent
Fire fighters should wear self-contained breathing apparatus (SCBA)	

6. Accidental Release Measures:

In case of spillage: Sweep or vacuum materials and place in proper containers for disposal. No special precautionary measures required under anticipated usage.

7. Handling and Storage:

Normal Handling: Avoid processing product above recommended processing temperature. Read product technical data sheet before handling the material. Avoid skin contact with product dust. Avoid breathing of the vapor. Always work in well-ventilated environment. Wash thoroughly with water after

handling.

Storage Recommendation: The product is sensitive to heat and moisture. Please store away from direct sunlight in cool dry place with air-tight or vacuum sealed bags. Avoid prolonged exposure to extreme heat.

8. Exposure Control:

Engineering Control: Good manufacturing practice recommends the use of local exhaust ventilation at process points.

Personal Protective Equipment: Wear Gloves when handling fiber. Wear safety glass with side shields. Use mechanical mask approved by NIOSH (N95) when necessary.

Additional recommendation: If finishing of the final product requires cutting, grinding or sanding, take caution always wear protective safety glass and clothing to prevent contact with fine dust.

9. Physical and Chemical Properties:

Form:	Monofilament
Odor:	Odorless
Color:	Opaque white
pH value:	Not applicable
Melting Temperature:	Approx. 190 – 195 degrees Celsius
Density:	1.11 -1.15 g/cm ³
Bulk Density:	Approx. 700 kg/cm ³
Vapor Density:	Not applicable
Solubility in Water:	Not soluble in water

10. Stability and Reactivity:

Conditions to Avoid: Product is stable under ordinary condition of use and storage. Avoid prolonged exposure to extreme heat. Avoid exposure to open flame.

Incompatibility: Not known

Hazardous Decomposition Product:

Thermal breakdown may involve complex mixture of compounds including but not limited to carbon monoxide, carbon dioxide, ammonia, amines, amides, and hydrogen cyanide. Some of which may be flammable, toxic or irritating.

Hazardous polymerization: Not applicable.

11. Toxicological Information:

Acute Effects: Low hazard for normal industrial handling

Chronic and sub chronic Effects: Not Tested.

Other Data: Not listed as carcinogen.

12. Ecological Information:

Toxicity: no adverse effects known

Persistence and degradability: no adverse effects known

Bioaccumulative potential: no adverse effects known

Mobility in soil: no adverse effects known

13. Disposal Considerations:

Unused product if discarded is not RCRA hazardous waste. Recommended methods of disposal are recycle, incineration, and landfill. Treatment, storage, transportation, and disposal of product must comply with applicable national, federal, state, and local disposal laws or regulations.

14. Transportation Information:

US DOT: Not Regulated

Canadian TDG: Not Regulated

Sea Transport (IMDG): Not Regulated

Air Transport (IATA/ICAO): Not Regulated

15. Regulatory Information:

This document has been prepared in accordance with the MSDS requirement of the OSHA Hazard Communication Standard 29 CFR 1910.1200

TSCA Inventory Status: All Components are listed on the TSCA Inventory or are exempt under PMN regulations.

Other TSCA Issues: None

EPCRA 311/312 (Hazard categories): Not hazardous.

US Food and Drug Administration (FDA): Not applicable.

State regulations:

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
MA, NJ, PA	105-60-2	caprolactam

16. Other Information:

Disclaimer: This product is NOT intended for use in medical implants.

NFPA Hazard codes:

Health: 1 Fire: 1 Reactivity: 0 Special:

HMIS III rating:

Health: 1 Flammability: 1 Physical hazard: 0

NFPA and HMIS use a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses no hazard. A value of four means that the substance is extremely dangerous. The information contained herein is presented in good faith and is accurate to the best of our knowledge. It is provided for your guidance only, because many factors may affect processing or application. We recommend that you make tests to determine the suitability of the product for your particular purpose prior to use. Z3D and the holding company cannot guarantee that any hazards listed herein are the only ones with may exists. Z3D and the holding company makes no warranty of any kind, expressed or implied,

concerning the safe use of the material in your process or in combination with other substances, including but not limited to warranties of merchantability or fitness for a particular purpose.. User has the sole responsibility to determine the suitability of the material for their use. User must meet all applicable safety, health, and regulatory standards.
END OF DATA SHEET