

TOYOBO

TOYOBO MC Corporation

Product Name PBO fiber ZYLON
 First issue : Aug. 10, 2000
 Revised : May. 10, 2023
 MSDS No. 00160F

MATERIAL SAFETY DATA SHEET**1 PRODUCT AND COMPANY IDENTIFICATION**

Product Name PBO fiber ZYLON®
 SUPPLIER
 Name TOYOBO MC Corporation
 Address Osaka Umeda Twin Towers South, 1-13-1 Umeda, Kita-ku,
 Osaka 530-8230 JAPAN
 Telephone No. +81-6-6348-3130
 Fax No. +81-6-6348-3413
 Recommended use Woven fabric, Knitted fabric, Felt, Rope&Cable, FRP, FRR, etc
 Restrictions on use Medical product

2 HAZARDS IDENTIFICATION

Most Important Hazards Few adverse human health effects are anticipated.
 Specific Hazards Since it is high strength, the fiber can severely cut fingers or skin.
 Decomposes and emits toxic fumes at higher than 600°C.
 GHS Classification Not classified

3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Product Article
 (substance/mixture)
 Chemical Name Poly[Benz(1,2-D:5,4-D')bisoxazole-2,6-diyl-1,4-phenylen]
 Synonym 1,4-benzenedicarboxylic acid, polymer with 4,6-diamino-1, 3-
 benzenediol dihydrochloride
 CAS No. 60857-81-0
 Components Contributing to the Hazard Substances classified as hazardous are less than 1%.
 GHS Classification Not classified

4 FIRST-AID MEASURES

Inhalation Remove to fresh air if effect occurs. Consult a physician.
 Skin Contact Wash off in running water or shower.
 Eye Contact Flush eyes with plenty of water. If irritation persists, seek medical attention.
 Ingestion Induce vomiting. If indisposition continues, seek medical attention.

5 FIRE-FIGHTING MEASURES

Extinguishing Media Water, Foam, Dry Chemical
 Specific Hazards Decomposes and emits toxic fumes such as hydrogen cyanide under fire or in environments above 600°C.
 Protection of Firefighters Wear self-contained breathing apparatus and protective clothing at large scale fires.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions Can severely cut or even sever fingers when entangled.
 Environmental Precautions May entangle and injure wild animals.
 Methods for Cleaning up Sweep up with a vacuum cleaner or a broom.



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7 HANDLING AND STORAGE

HANDLING

Technical Measures	When cutting or handling short fibers, minimize the generation of fine fibrils. When fine fibrils are being generated, use with a local exhaust system. To avoid damage to equipment or injury to personnel, equipment used to process high strength fiber should have fail-safe mechanisms in case of entanglement.
Precautions	Good ventilation is needed at work area. If dust exposure causes eye discomfort, use chemical goggles.
Safe Handling Advice	Since high strength fiber can severely cut or even sever fingers, avoid touching a moving thread line. Avoid entanglement in a moving thread line as bodily injury may result.

STORAGE

Technical Measures	No special measures needed.
Storage Conditions	To maintain the mechanical properties, the fiber is to be stored free from exposure to light, high temperature and humidity.
Incompatible Products	None
Packaging Materials	To maintain the mechanical properties, store in light-proof package.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES Good ventilation should be sufficient for most conditions. A local exhaust system may be necessary for some operations.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection	When cutting or mechanically working this material, wear an approved high-efficiency particulate respirator.
Hand Protection	In order to prevent skin-abrasion or friction-burn, put on heat-resistant gloves.
Eye Protection	Use safety glasses. If dust exposure causes eye discomfort, use chemical goggles.
Skin and Body Protection	In order to prevent skin-abrasion or friction-burn, protective clothing should be worn.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid (long fibers)
Color	Golden yellow to reddish brown
Odor	None
pH	Not applicable
Boiling Point	Not applicable
Melting Point	Not applicable
Decomposition Temperature	600°C and above
Flash Point	600°C and above
Explosion Temperature	None at ambient temperature
Density	1.54 to 1.56 g/cm ³
Solubility	Insoluble in Water. Partially soluble in aqueous strong acid.

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MATERIAL SAFETY DATA SHEET**10 STABILITY AND REACTIVITY**

Stability Stable
 Possible Hazardous Reactions None
 Conditions to Avoid Avoid open fire, heated environment at over 600°C.
 Hazardous Decomposition Hydrogen cyanide during incineration.
 Products

11 TOXICOLOGICAL INFORMATION

Acute Toxicity Not available
 Local Effects
 Inhalation Fibrils could be inhaled and may cause respiratory irritation.
 Skin Contact Fibers may cause slight irritation especially at clothing binding points.
 Eye Contact Could cause mechanical irritation upon eye contact.
 Subchronic Toxicity Data on other types of fibers suggest that repeated excessive inhalation exposures to air borne fibrils may cause respiratory irritation and lung effects / injury.
 Specific Effects
 Carcinogenicity Lung injury and tumors have been observed in laboratory animals exposed to respirable fibrils of another structurally similar material for two years.
 Mutagenicity Negative

12 ECOLOGICAL INFORMATION

Mobility Unlikely to move in environment.
 Persistence/Degradability Persists for a long time in the environment.
 Bioaccumulation Unlikely to occur.

13 DISPOSAL CONSIDERATIONS

Waste from Residues Dispose of in accordance with all applicable local and national laws and regulations.
 Contaminated Packaging Dispose in the same way as the material.

14 TRANSPORTATION INFORMATION

International Regulations
 UN Classification Number Not classified
 Follow all of the laws and regulations in your country
 Specific Precautions Do not drop, overturn, or destroy containers for heavy load.
 To prevent packages from breaking, keep dry and handle with care.

15 REGULATORY INFORMATION

Follow all of the laws and regulations in your country.

16 OTHER INFORMATION

Notice The information in this MSDS, to the best of our knowledge, is accurate and correct. However, TOYOBO makes no warranty and assumes no liability whatsoever in connection with any use of this information. The MSDS is subject to revision as new information becomes available.