1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: PBO fiber ZYLON

SUPPLIER
Name: TOYOBO Co., Ltd.
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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 (substance/mixture): Article
Chemical Name: Poly[Benz(1,2-D:5,4-D')bisoxazole-2,6-diyl-1,4-phenylene]
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 0.1%.
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.
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/PERSOAL 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/cm³

Solubility
Insoluble in Water. Partially soluble in aqueous strong acid.

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10 STABILITY AND REACTIVITY
Stability Stable
Possible Hazardous Reactions None
Conditions to Avoid Avoid open fire, heated environment at over 600℃.
Hazardous Decomposition Hydrogen cyanide during incineration.

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 Not classified
UN Classification Number 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, TOYOB0 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.