

Teflex

BFM® GLOBAL LTD
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 New Zealand

1. PRODUCT IDENTIFICATION:

Product Name: PTFE Fluoropolymer Fibre (Natural & Bleached)
Trade Names & Synonyms: PTFE Fluoropolymer Continuous Multifilament Yarn
 PTFE Fluoropolymer Staple
 PTFE Fluoropolymer Flock
Chemical Family: Aromatic thermoplastic polyurethane
Chemical Name: Polyurethane elastomer

2. HAZARDS IDENTIFICATION:

Based on toxicological testing and more than 20 years experience in commercial use, PTFE Fluoropolymer fibre products present minimal risk to human health and the environment. Breathing decomposition products from PTFE Fluoropolymer above 300 deg. C can produce flu-like symptoms (polymer fume fever) that usually last 36-48 hours. The symptoms may occur several hours after the exposure.

Smoking tobacco and cigarettes contaminated with PTFE Fluoropolymer particles may produce polymer fume fever. Gases that can be fatal at low concentrations may be emitted when PTFE Fluoropolymer is heated above 400 deg. C.

Carcinogenicity Information: None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

3. COMPOSITION/ INFORMATION ON INGREDIENTS:

PTFE FLUOROPOLYMER FIBRE (Natural)

| Components/Material | CAS Number | % |
|-------------------------|------------|---------|
| PTFE Fluoropolymer Yarn | 9002-84-0 | 94-97 |
| Water | 7732-18-5 | 0.1-0.3 |
| Carbonaceous Residues | 7440-44-0 | 3-6 |

PTFE FLUOROPOLYMER FIBRE (Bleached)

| Components/Material | CAS Number | % |
|-------------------------|------------|---------|
| PTFE Fluoropolymer Yarn | 9002-84-0 | >99 |
| Water | 7732-18-5 | 0.1-0.3 |

Components (Remarks):

PTFE Fluoropolymer is principally a solid polymer composed of carbon and fluorine.

4. FIRST AID MEASURES:

Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Ingestion: Not a probable route. However, in case of gastro-intestinal distress following accidental ingestion, call a physician.

Inhalation: If exposed to excess levels of fiber dust or fly, remove to fresh air and get medical attention if cough or other symptoms persist.

Skin: Wash with soap and water. Get medical attention if irritation develops or persists.

5. FIRE-FIGHTING MEASURES:

Flammable Properties / Flash Point: Not applicable. The lower explosive limit is not applicable. The upper explosive limit is not applicable. Auto-ignition Temperature is not available. This product is inherently flame retardant.

Hazardous Combustion Products: Hydrogen fluoride forms during combustion. Hydrogen fluoride is highly corrosive and toxic. Other combustion gases are mostly carbon dioxide, water and oxides of nitrogen. However, carbon monoxide and various other toxic gases may be produced depending on the conditions of burning.

Unusual Fire And Explosion Hazards: PTFE Fluoropolymer thermal decomposition begins at 300 degrees C. Up to 400 deg. C, the decomposition products are mainly monomer and a waxy sublimate. Breathing these decomposition products can result in flu-like symptoms, (polymer fume fever) which normally last 36-48 hours with no cumulative effect. Above 400 deg. C, gases such as hydrogen fluoride and perfluoroisobutylene, which can be fatal at low concentrations, are evolved.

Extinguishing Media: Use any available extinguishing media.

Fire Fighting Instructions: As in any fire, wear self contained breathing apparatus pressure demand, MSHA/NIOSH approved (or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES:

Safeguards (Personnel): Review **Fire Fighting Measures** sections before proceeding with cleanup. Use appropriate **Personal Protective Equipment** during clean-up.

Spill Clean Up: Use appropriate **Personal Protective Equipment** during clean up. Clean up dusts and fibres with vacuum equipment. Sweep up spilled solids, place in clean container and seal for later disposal or reclamation.

7. HANDLING AND STORAGE:

No special handling or storage required.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION:
Engineering Controls

Ventilation: Breathing decomposition products from PTFE Fluoropolymer at 300 to 400 deg. C can produce flu-like symptoms (polymer fume fever) that usually last 36 - 48 hours. The symptoms may occur several hours after the exposure. Smoking tobacco and cigarettes contaminated with PTFE Fluoropolymer particles may produce polymer fume fever. Gases that can be fatal at low concentrations may be emitted when PTFE Fluoropolymer is heated above 400 deg. C. Practice good industrial hygiene when handling PTFE Fluoropolymer products and avoid breathing fumes from when PTFE Fluoropolymer is heated above 300 deg. C. Provide adequate exhaust ventilation to completely capture and remove vapors and fumes from operations that involve heating PTFE Fluoropolymer products above 300 deg. C.

Personal Protective Equipment

Inhalation: When these products are used at elevated temperature or in a way that creates airborne decomposition products, wear NIOSH/MSHA approved combination organic vapour/acid gas/dust-mist respirators. Get medical attention, if cough or other symptoms develop.

Skin: Observe good industrial hygiene practices while handling these products and provide adequate exhaust ventilation to maintain exposures below the applicable dust and fibers limits. Gloves and long sleeved loose fitting clothing may be useful in some cases. Wash with mild soap and water after handling these products. Get medical attention if irritation develops or persists

Eyes: Wear safety glasses with side shield for general eye protection. Get medical attention if irritation persists.

Ingestion: Not a probable route. However, in case of gastro-intestinal distress following accidental ingestion, call a physician.

Applicable Exposure Limits:
PTFE Fluoropolymer (Particulates (Not Otherwise Regulated))

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|--------------|--|
| PEL (OSHA): | 15 mg/m ³ , 8 Hr. TWA, total dust 5 mg/m ³ , 8 Hr. TWA, respirable dust |
| TLV (ACGIH): | 10 mg/m ³ , 8 Hr. TWA, total dust 5 mg/m ³ , 8 Hr. TWA, respirable dust |
| AEL*: | 10 mg/m ³ , 8 Hr. TWA, total dust 5 mg/m ³ , 8 Hr. TWA, respirable dust |

* AEL is Toray's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the Acceptable Exposure Limit are in effect, such limits shall take precedence.

9. PHYSICAL AND CHEMICAL PROPERTIES:

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|-----------------------------|--------------------------------------|
| Form: | Solid. |
| Colour: | Brown/White. |
| Melting Point: | 327 degrees C for PTFE Fluoropolymer |
| Solubility in Water: | Insoluble |
| Odour: | Burnt Sugar/None. |

All physical and chemical properties are same except for colour and odour. The natural fibre is brown in colour and burnt sugar in odour. The bleached fibre is white in colour and none in odour.

10. STABILITY AND REACTIVITY:

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|-----------------------------|--|
| Chemical Stability: | Stable at normal temperatures and storage conditions. |
| Conditions To Avoid: | This product's polymer begins to thermally degrade rapidly above 400 deg. C (800 deg. F). The thermal degradation rate increases with temperature. |

Avoid contaminating tobacco products with PTFE Fluoropolymers.

Incompatible Materials: None known.

Decomposition: PTFE Fluoropolymer thermal decomposition begins at 300 deg. C. Up to 400 deg. C, the decomposition products are mainly monomer and a waxy sublimate. Breathing these decomposition products can result in flu-like symptoms (polymer fume fever) which normally lasts 36 - 48 hours with no cumulative effect. Above 400 deg C, gases such as hydrogen fluoride and perfluoroisobutylene, which can be fatal at low concentrations, are evolved.

Polymerization: Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION:

Human/Animal Data: These products present minimal risk to human health and the environment. Human skin irritation or animal testing has not been conducted.

12. ECOLOGICAL INFORMATION:
Ecotoxicological Information

These products are essentially inert in the environment. They do not decompose in landfills and other natural environments, and therefore, do not release toxic degradation materials into the ecosystems. This material is not toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS:
Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. These products are not hazardous waste as defined by regulations implementing the Resource Conservation and Recovery Act (RCRA). In general, waste materials may be discarded in accordance with State and Local regulations governing the disposal of other common or non-RCRA regulated waste materials.

Incineration Information:

Due to the inherent thermal resistance of these products and their components, they are not usually incinerated. However, should it be necessary to incinerate PTFE Fluoropolymer products, these precautions should be exercised:

- The hydrogen fluoride that forms during incineration must be neutralized or otherwise treated. Hydrogen fluoride is highly corrosive to materials of construction that may be in incinerators including refractory brick.
- Toxic gases are emitted during the thermal decomposition of PTFE Fluoropolymer and provision to prevent their release must be implemented.
- The incinerator must be equipped with off-gas treatment facilities and adequate monitoring to assure that no toxic releases occur.
- Incinerator Temperatures - 1800 deg. F (1000 deg.C) minimum.

14. TRANSPORT INFORMATION:

Shipping Information – DOT

Not Regulated.

International Civil Aviation Organization (ICAO) classification not required.

International Maritime Dangerous Goods (IMDG) classification not required.

TDG Class : This material is Not Regulated.

15. REGULATORY INFORMATION:

U.S. FEDERAL REGULATIONS:

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title iii: These products are not regulated as a hazardous waste under CERCLA and are not subject to the Superfund tax.

State Regulations (U.S.): California Safe Drinking Water and Toxic Enforcement Act of 1986 (proposition 65): This product contains none of the substances known to the State of California to cause cancer or reproductive toxicity.

STATE RIGHT -TO-KNOW REGULATIONS:

The information in this MSDS complies with the requirements of those Laws.

16. OTHER INFORMATION:

NFPA, NPCA-HMIS

NFPA Rating

Health: 1

Flammability: 0

Reactivity: 0

NPCA-HMIS Rating

Health: 1

Flammability: 0

Reactivity: 0

Medical Use: Caution:

Do not use in medical applications involving permanent or temporary implantation in the human body or contact with body fluids.

Ozone Depleters:

This product does not contain any of the ozone depleting substances listed in either Class I (chlorofluorocarbons, halon, carbon tetrachloride, and methyl chloroform) or Class II (hydrochlorofluorocarbons) of the Clean Air Act Amendments of 1990. Nor do any of these chemicals come in contact with these products during their manufacture.

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