



TEIJIN CARBON AMERICA, INC.

MATERIAL SAFETY DATA SHEET

SDS NO. 0503 Rev M

CHEMTREC EMERGENCY TELEPHONE NO. (800) 424-9300

EFFECTIVE DATE: 4/1/18

TEIJIN CARBON AMERICA, INC.

121 Cardiff Valley Road, Rockwood, TN 37854 USA

TENAX® CONTINUOUS, CHOPPED, MILLED OR PELLETIZED CARBON FIBERS

This product is considered non-hazardous in the form shipped. The below information is provided as a hazard classification of product end use. Per 29 CFR 1910.1200(b)(2): A manufacturer, distributor or importer must consider the hazards of a chemical during normal conditions of use or in a foreseeable emergency. The hazards related to normal processing (e.g. milling, chopping, grinding) must be considered in conducting the hazard classification. This document is provided to the end user in order for them to assess safe handling of this product within their process.

1. Product and Supplier Identification

Product Name: Filament Yarn or Chopped/Milled Carbon Fiber with sizing (surface finish)

Recommended Use: Filament Yarn or Chopped Carbon Fiber may be used in thermoplastic, thermoset, paper, adhesives, etc.

Relevant Uses: Industrial applications

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2. Hazard identification

Overview:

State of Hazard: Warning! May cause temporary mechanical irritation of the eyes, skin or upper respiratory tract. Mechanical processing may produce a respirable fiber.

Appearance and Odor: Black fibers of varying weight, width and thickness, depending on style with and without sizing, with no distinctive odor.

If sized, vapor or fumes generated from heating or curing this product may cause eye and respiratory tract irritation.

Carbon fibers or dust are electrically conductive and may create electrical short-circuits which could result in damage to and malfunction of electrical equipment and/or personal injury.

In the supplied form the product is not explosive however the processing and buildup of fine dust can lead to a risk of dust explosions. Warning: processing may create combustible dust concentrations in the air.

HMIS Rating:

Health-1	Flammability-0	Reactivity-0	PPE-See Section 8
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3. Composition/Information on Ingredients

Name	CAS	% Weight
Carbon Fiber	7440-44-0	>=95%
Trade Secret Sizing	N/A	<=5%

4. First Aid Measures

Potential Health Effects:

Acute

Eye: Contact may cause mechanical irritation to the eyes. If sized, vapor from exposure of this product to elevated temperatures may cause irritation to the eyes. Dust from machining or grinding may cause mechanical irritation.

Skin: Contact may cause mechanical irritation to the skin. Dust from machining or grinding the product may cause mechanical irritation.

Inhalation: May cause irritation to the upper respiratory tract. If sized, vapor from exposure of this product to elevated temperatures may cause irritation to the respiratory tract.

Ingestion: Unlikely under normal conditions of use.

Medical Conditions Aggravated by Exposure: Preexisting eye, skin or respiratory disorders may be aggravated by exposure to this product or the dust from machining or grinding.

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

Treatment

Eye: In case of eye contact, immediately flush eyes with large amounts of water for at least 15 minutes, keeping the eyelids open.

Skin: In case of contact that causes irritation, immediately wash skin with soap and room temperature to cool running water. To avoid further irritation, do not rub or scratch irritated areas. Rubbing or scratching may force fibers into the skin. Get medical attention if irritation persists.

Inhalation: If large amounts of dust or fiber are inhaled, remove to fresh air. If breathing continues to be difficult get medical attention.

5. Fire Fighting Measures

Flash Point: N/A

Means of Extinction: In case of fire use water mist, foam, dry powder.

Protection of fire fighters: Since gas, such as carbon monoxide can generate combustion, fire fighters should wear suitable protection. Avoid exposure through use of self-contained, positive-pressure breathing apparatus.

6. Accidental Release Measures

Procedures in case of accidental release: Avoid contact with skin, eyes or clothing (see section 8). Clean up material, put into a suitable container and dispose of in accordance with local waste regulations.

7. Handling and Storage

Precautions to be taken in handling and storage: Store in a cool, dry place. Maintain sealed against contamination.

8. Exposure Control and Personal Protection

Name	CAS	% Weight	Exposure
Carbon Fiber	7440-44-0	>=95%	OSHA PEL (as particulate/dust) 15mg/m3 (Total), 5mg/m3 (Respirable)
			NIOSH-Recommended Exposure Limit-REL (as particulate/dust) Total Dust as 10 mg/m3 (Total), 3 mg/m3 (Respirable)
			NIOSH-Recommended Exposure Limit-REL (as Respirable Fiber) 3 f/cc
Trade Secret Sizing	N/A	<=5%	None

Eye/face Protection: Avoid eye contact. Wear safety glasses with side shields, as necessary, when using this product and during machining and grinding operations.

Skin Protection: Clothing such as loose fitting long sleeved shirt, coveralls that covers to the base of the neck, long pants and gloves to protect against irritation. Skin irritation occurs primarily at pressure points (neck, wrist, between finger, etc.)

Respiratory Protection: Usually not required. If dust or fibers are generated during processing or when machining or grinding use of a NIOSH approved dust respirator may be needed.

Ventilation: Use local exhaust sufficient to control dust generation. Accumulation of fine dust may entail a risk of a dust explosion. Fine dust from carbon fiber compound or composite that is milled or chopped could create dust explosion risk. A process hazard analysis is recommended to determine what, if any risk are present. If exhaust ventilation is not available or is inadequate, use NIOSH approved respirator for dust.

General Hygiene Recommendations: Before eating drinking or smoking, wash face and hands thoroughly with soap and water. Remove any contaminated clothing and launder before reuse. Use vacuum equipment to remove fibers and dust from clothing and work areas. Do not use compressed air for cleaning.

9. Physical and Chemical Properties

Appearance and Odor: Black fibers of varying weight, width and thickness, depending on the style, with or without sizing, with no distinctive odor.

Melting Point: 3500°C

Specific Gravity (water=1): 1.6-2.0

pH: Not Determined

Volatile (% by weight): 0

Percent VOC: Not determined

Solubility in water: Negligible

10. Stability and Reactivity

Stability/Instability: This material is stable. Hazardous decomposition and polymerization will not occur. Complete or partial combustion of the surface coating on "sized" carbon fiber may generate COx, NOx, and / or other trace chemicals.

Reactivity/Incompatibility: Reactions with strong oxidizing agents.

Decomposition products: CO CO₂, NO are generated by combustion

Hazardous Polymerization: Will not occur under proper conditions of use. Rapid heating of this product in bulk may produce uncontrolled exothermic reaction that may char and decompose sizing system on a sized fiber.

11. Toxicological

Acute Toxicity: None

Effects on skin and eyes: Contact with fiber and/or dust can cause eye and skin irritation.

Chronic or long term toxicity: Not Determined

Mutagenicity: Not determined

Experiences made in practice: Fiber and dust abrasion can cause irritation.

Primary Route of Exposure

Eye-Yes	Skin-Yes	Inhalation-Yes	Ingestion-No
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12. Ecological Information

No data has been determined. Can be separated from water by mechanical separation.

13. Disposal Considerations

Material for disposal should be placed in sealed containers to avoid potential human and environmental exposure. It is the responsibility of the generator to comply with all federal, state and local laws and regulations. Under US Resource, Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification.

14. Transportation Information

DOT: Not Regulated

IMDG: Not classified as a dangerous goods

IATA: Not classified as a dangerous good

15. Regulatory Information

TSCA: This product is an article as defined by TSCA. CAS-Carbon Fiber 7440-44-0

SARA Title III: Section 302/304 Extremely hazardous Substance: None
 Section 311 Hazardous Categorization: None
 Section 313 Toxic Chemicals: None

CERCLA Section 102(a) hazardous substance: None

RCRA Information: Currently this product is not listed in federal hazardous waste regulations 40CFR, 261.33. State or local regulations may apply if they are different from federal regulations. It is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant classification and to assure proper disposal.

WHMIS (Canada): Classification-none

California Safe Drinking water and Toxic Enforcement Act of 1986 (Proposition 65): None

Ozone Depletion Information: This product does not contain or is not manufactured with ozone depleting substances as identified in Title VI, Clean Air Act "Stratospheric Ozone Protection" and the regulations set forth in 40 CFR, Part 82.

VOC: None

16. Other Information

REVISION HISTORY – SDS 0503 –CARBON FIBER - CONTINUOUS FILAMENT OR CHOPPED, WITH SIZING		
Revision	Effective	Summary of Changes
REV: I	8/19/13	Changed Title from MSDS (Material Safety Data Sheet) to SDS (Safety Data Sheet).
REV: I	8/19/13	Changed Format of MSDS to SDS Format-Required under the modification of the OSHA Hazardous Communication Standard (29CFR1910.1200).
REV: J	9/16/13	The order of sections 2 and 3 has been reversed. GHS Hazard Statements and GHS Precautionary Statements have been listed in Section 2 Hazard Identification, (R and S Codes). Emergency phone # moved to Section 1. Product Relevant Uses and Uses Advised Against have been added to Section 1.
REV: K	11/13/13	Updated Section 2 for GHS compliance.
REV: L	11/5/14	Section 2 hazard statement was clarified.
REV: M	8/17/16	Removed J. Carling from contacts.
REV: N	3/23/17	Reformatted SDS Document.
REV: M	4/1/18	Company name changed April 1, 2018 from "Toho Tenax America, Inc." to "Teijin Carbon America, Inc." All references to company name were updated.