



SAFETY DATA SHEET

PRODUCT IDENTIFICATION

Product Name: **TC-09-U (Carbon unidirectional)**
9.4 oz/yd² - 320 g/m²

Product Composition: **97.0% Toho[®] Carbon, 3.0% HM Glass** (by product weight)

Weaver: **Texonic inc**
445 St-Jacques
Québec, Canada
J3B 2M1
Tel.: (450) 346-6853

Raw materials:	Toho Tenax America	EY Technologies
	121 Cardiff Valley Road Rockwood, TN 37854 USA Tel.: (800) 424-9300 (Chemtrec)	939 Currant Road Fall River, MA 02720 USA Tel.: (508) 673-3307

The production of TC-09-U fabric has not in any way altered the physical state of the raw materials used to make this product, please see the enclosed SDS from the supplier of the raw material.

SAFETY DATA SHEET

SDS NO. 0503 Rev L

EFFECTIVE DATE: 5 November 2014

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Product Identifier: Tenax®-A, E, or J - continuous or chopped carbon fiber, with sizing (surface finish)

Company: Toho Tenax America, Inc.
121 Cardiff Valley Road
Rockwood, TN 37854

Phone: (865) 354-4120

Fax: (865) 354-8409

Homepage: <http://www.tohotenax-us.com>

Contacts: Jason Carling – Global R&D Manager jcarling@tohotenaxus.com
Mark Klemmer – ES&H Manager mklemmer@tohotenaxus.com

Emergency Phone #: **CHEMTREC (800) 424-9300**

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

Uses advised against: None known

Method of operation: See product information.

2. HAZARD(S) IDENTIFICATION

Overview: In supplied form the product is not hazardous. When handled and processed can cause skin, eye and respiratory tract irritation

Primary Routes of Exposure: Eye – Yes, Skin – Yes, Inhalation – Yes, Ingestion – No

HMIS Rating: Health – 1, Flammability – 0, Reactivity – 0, Special – NONE

Hazard Classification: May cause eye or skin irritation, otherwise Non Hazardous
Hazard Statement: H315, H319
Hazard Symbols: None 
Signal Word: None
Health Hazards: See Section 11
Precautionary statement: Possible irritant to the skin, eyes and respiratory tract when processed due to nuisance dust generation. Fiber is electrically conductive.
Physical / Chemical Hazards: See Section 10 for additional information: 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.
Environmental hazards: No specific hazards known.
Other hazards: None

3. COMPOSITION/INFORMATION on INGREDIENTS

<u>Name</u>	<u>CAS</u>	<u>% WT</u>	<u>OSHA PEL TWA</u>	<u>ACGIH TLV TWA</u>	<u>SARA</u>
Carbon Fiber (derived from polyacrylonitrile)	7440-44-0	>=95%	N/A	N/A	No
Trade Secret Sizing Chemistry	N/A	<=5%	N/A	N/A	No

Comment on component parts: No dangerous components.

4. FIRST AID MEASURES

General information: N/A
Inhalation: Ensure supply of fresh air. Seek medical attention if breathing becomes difficult.
Skin contact: Supply with medical care. Consult a doctor if skin irritation persists.
Eye contact: In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.
Ingestion: Supply with medical care.
 Rinse out mouth and give plenty of water to drink.
 Induce the patient to vomit of his own accord only if fully conscious.
Advice to doctor: Treat symptomatically

5. FIRE FIGHTING MEASURES

Flash Point: N/A
LEL: N/A
UEL: N/A
Suitable extinguishing media: Dry powder
Extinguishing media that must not be used: Full water jet
Special exposure hazards arising from the substance or preparation itself or combustion products: Carbon monoxide (CO); Nitrogen oxides (NOx).
Special protective equipment for firefighters: Do not inhale combustion gases. Use self-contained breathing apparatus.
Additional information: Fire residues and contaminated firefighting water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	N/A
Environmental precautions:	N/A
Methods for cleaning up:	Take up mechanically. Dispose of material in accordance within the regulations.

7. HANDLING AND STORAGE

Advice on safe handling:	No special measures necessary if used correctly.
Advice on protection against fire and explosion:	Dust may form an explosive mixture with air when processed. Keep away from sources of ignition and refrain from smoking in the vicinity.
Requirements for storage rooms and vessels:	No special measures necessary.
Advice on storage compatibility:	Do not store together with oxidizing agents.
Further information on storage conditions:	Store in a dry place. Recommended storage temperature: < 50°C, relative humidity: < 85% Electrical equipment, enclosures and circuits in or near areas where carbon fibers are used should be protected against infiltration or contact with airborne particles or filaments. Carbon fiber is electrically conductive and may cause an electrical short.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Additional advice on system design:	Ensure adequate ventilation on workstations. The effectiveness and design of ventilation systems and their implementation to control dust should be considered. Proper routine housekeeping should be instituted to ensure dust does not accumulate on surfaces.
Respiratory protection:	Breathing apparatus in the event of high concentrations, filter N95. Short- term: filter apparatus, filter N95
Hand protection:	Butyl rubber, > 120 min (EN 374)
Eye protection:	Safety glasses
Skin protection:	Mechanical irritation accompanied by itching or dermal effects may occur from exposure to material. Clean room type clothing that consists of a light weight, well ventilated, fabric may prevent the transfer of dust. Consider taping at the wrist and ankle areas to control contact with exposed areas. A PPE hazard analysis should be conducted based on the user processes.
General protective measures:	Avoid contact with eyes. Do not inhale dust.
Hygiene measures:	Wash hands before breaks and after work. Use barrier skin cream.
Delimitation and monitoring of the environmental exposition:	Not determined

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Fine Fiber
Color:	Black
Odor:	Odorless
pH Value [1%]:	N/A
pH value:	N/A
Boiling point [°C]:	N/A
Flash point [°C]:	N/A
Flammability [°C]:	N/A
Lower explosion limit:	N/A
Upper explosion limit:	N/A
Oxidizing properties:	None
Vapor pressure [kPa]:	N/A
Density at 20°C [g/ml]:	1.76 – 1.86 (carbon density)
Bulk density [kg/m³]:	N/A
Solubility in water:	Insoluble
Partition coefficient [noctanol/water]:	N/A
Viscosity:	N/A
Relative vapor density in air:	N/A
Evaporation speed:	N/A
Melting point:	ca. 3500 °C
Autoignition temperature:	N/A
Decomposition temperature:	>650 °C in air, preparation > 290°C
Electrically Conductive:	Yes

10. STABILITY AND REACTIVITY

Hazardous reactions: Avoid reactions with strong oxidizing agents. Accumulation of fine dust may entail the risk of a dust explosion in the presence of air. The fine dust from a carbon fiber compound or composite that is cut or formed can create additional dust explosion risk depending on the resin or compounding agent. A process hazard analysis is recommended to determine what, if any, risks are present.

Hazardous decomposition products: No hazardous decomposition products will be formed during normal usage of carbon fiber. Complete or partial combustion of the surface coating on "sized" carbon fiber may generate CO_x, NO_x, and / or other trace chemicals.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity:	Not determined
Acute dermal toxicity:	Irritant
Acute inhalational toxicity:	Irritant
Irritant effect on eye:	Not determined
Irritant effect on skin:	Mechanical skin irritation.
Sensitization:	Not determined
Sub-acute toxicity:	Not determined
Chronic toxicity:	Not determined
Mutagenicity:	Not determined
Reproduction toxicity:	Not determined
Carcinogenicity:	Not determined
Experiences made in practice:	Fiber abrasion can cause mechanical skin irritation.

12. ECOLOGICAL INFORMATION

Fish toxicity: N/A
Daphnia toxicity: N/A
Behavior in environment compartments:
Not determined
Behavior in sewage plant: N/A
Bacteria toxicity: N/A
Biological degradability: N/A
COD: Not determined
BOD 5: Not determined
AOXadvice: No dangerous components
General information: Ecological data are not available.

13. DISPOSAL CONSIDERATIONS

Product: For recycling, consult manufacturer and / or waste disposal centers.
EU Waste Number: 160306, 061399
Contaminated packaging: Packaging that cannot be cleaned should be disposed of as for product. Uncontaminated packaging may be taken for recycling.
EU Waste Number: 150101, 150102

14. TRANSPORT INFORMATION

Classification according to DOT: Non Hazardous
Classification according to IMDG: Not classified as "Dangerous Goods"
Classification according to IATA: Not classified as "Dangerous Goods"

15. REGULATORY INFORMATION

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, the product is not listed in federal hazardous waste regulations 40 CFR, Part 261.33, paragraphs (e) or (f), i.e. chemical products that are considered hazardous if they become wastes. State or local hazardous waste regulations may also apply if they are different from the federal regulation. It is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.

U.S., EPA, TSCA Information: This product is an article as defined by TSCA and is not required to be listed in the TSCA inventory.

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.

Exposure Risk: Not determined
Chemical safety report: Not determined

Labeling: All chemicals in this product are included on the TSCA Inventory
Hazard symbols: None
R-phrases: R36/37/38 – Irritation to eyes, respiratory system and skin
S-phrases: S36/37/39 – Wear suitable protective clothing such as gloves, eye and face protection for nuisance dust and skin abrasion protection.

Special labeling:
Authorization, TITLE VII: N/A

Restrictions:
TITLE VIII: N/A
TRANSPORT REGULATIONS: IATADGR (2008).

16. OTHER INFORMATION

VOC (1999/13/CE): N/A
Customs Tariff: Not determined
European Union (2002/95/EC) RoHS / RoHS2:
 These products do not contain any of the chemicals listed in the RoHS / RoHS2 regulations

REVISION HISTORY – SDS 503 –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.

SAFETY DATA SHEET

HM2819

DATE: 3/11/2016

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: HM2819
SYNONYMS: EVA Hot Melt coated yarn

MANUFACTURER: E.Y. Technologies
ADDRESS: 939 Currant Road Fall River MA. 02720

EMERGENCY PHONE: (508) 673-3307
FAX PHONE: (508)672-6717

PREPARED BY: Peter Stetkiewicz

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

PHYSICAL APPEARANCE: Clear hot melt coated yarn.
IMMEDIATE CONCERNS: Contact with molten coating will cause thermal burns.

POTENTIAL HEALTH EFFECTS

EYES: Molten coating will cause severe eye damage if contact occurs.

SKIN: When heated hot melt coating can cause thermal burns.

INGESTION: Ingestion causes irritation of upper respiratory system and gastrointestinal disturbance. Molten coating will produce burns to the gastrointestinal tract.

INHALATION: Heated fumes can cause irritation of respiratory system.

CHRONIC: No data available.

CARCINOGENICITY: Not considered a carcinogen in its current form.

MUTAGENICITY: No data available.

PRECAUTIONARY STATEMENTS: Read and follow Safety Data Sheet before use. Seek medical advice/attention if symptoms contained herein persist or worsen.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT: Proprietary Non/Hazardous

<u>CAS NO.</u>	<u>CHEMICAL NAME</u>	<u>% WT</u>
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SECTION 3 NOTES:

CARCINOGENICITY

OSHA: NO
OTHER:

ACGIH: NO

NTP: NO

IARC: NO

SAFETY DATA SHEET

HM2819

DATE: 3/11/2016

SECTION 4: FIRST AID MEASURES

EYES: If hot product contacts eye, flush with water for at least 15 minutes and seek medical attention.

SKIN: If hot product contacts skin, cool under running water and get medical attention. Cool melted product on skin with plenty of water. Do not remove solidified product.

INGESTION: If ingested, get immediate medical attention. Do not induce vomiting unless instructed to do so by medical personnel.

INHALATION: Move to fresh air in case of accidental inhalation of vapors or decomposition of products. If symptoms persist, get medical attention.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: No data available.

SECTION 4 NOTES:

SECTION 5: FIRE-FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Dry chemical, foam or carbon dioxide.

FIRE FIGHTING PROCEDURES: This material is in solid form at room temperature, but in fire conditions fumes and decomposition will produce acetic acid and carbon monoxide. Full protective clothing and breathing apparatus should be worn.

UNUSUAL FIRE AND EXPLOSION HAZARD: Cooling with water will solidify the material very rapidly. No unusual fire and explosion hazards are known.

COMBUSTION PRODUCTS: Incomplete combustion will produce acetic acid and carbon monoxide.

SECTION 5 NOTES:

SECTION 6: ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Collect spillage. Dispose of contents in accordance with local and federal requirements.

LARGE SPILL: Avoid release to the environment. Collect spillage in accordance with local and federal requirements.

ENVIRONMENTAL PRECAUTION

WATER SPILL: Avoid release to waterways.

LAND SPILL: Do not allow material to enter drains.

PERSONAL PRECAUTIONS: Wear appropriate personal protective equipment during cleanup.

METHOD OF CLEANING UP: Clean spills in a manner to avoid releases to waterways. Place material in a properly labeled container.

SECTION 6 NOTES:

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Store in a cool location (60-80F) away from sunlight and any source of heat. Cover when not in use.

CONDITIONS FOR SAFE STORAGE, INCLUDING INCOMPATIBILITIES: Keep in a cool place. Keep container covered and dry.

SAFETY DATA SHEET

HM2819

DATE: 3/11/2016

SECTION 7 NOTES:

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA TABLE COMMENTS: NL = Not Listed.

EXPOSURE LIMITS: None established.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: When thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate NIOSH/MSHA approved respiratory protection must be provided.

EYE AND FACE PROTECTION: Where safety glasses, chemical goggles for fumes which may arise from thermal processing.

SKIN PROTECTION: Wear suitable protective clothing. Use any type of rubber thermal insulating gloves and other clothing as necessary to protect from thermal burns.

WORK HYGIENIC PRACTICES: Wear suitable protective clothing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

SECTION 8 NOTES:

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear hot coated yarn.

ODOR: Mild odor.

PHYSICAL STATE: Solid.

pH AS SUPPLIED: No data available.

BOILING POINT: No data available.

MELTING POINT: Hot Melt: 185°F

FREEZING POINT: No data available.

VAPOR PRESSURE (mmHg): No data available.

VAPOR DENSITY (AIR = 1): Heavier than air.

SPECIFIC GRAVITY (H₂O = 1): 1.2 @ 75°F.

EVAPORATION RATE: No data available.

SOLUBILITY IN WATER: Insoluble.

PERCENT SOLIDS BY WEIGHT: Solid material.

VISCOSITY: No data available.

SECTION 9 NOTES:

SAFETY DATA SHEET

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DATE: 3/11/2016

SECTION 10: STABILITY AND REACTIVITY

STABLE

UNSTABLE

STABILITY: X

CONDITIONS TO AVOID (STABILITY): Avoid excessive overheating.

HAZARDOUS DECOMPOSITION PRODUCTS: Upon decomposition this product emits acetic acid and carbon monoxide.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 10 NOTES:

SECTION 11: TOXICOLOGICAL INFORMATION

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Possible nausea, headaches or respiratory distress.

ACUTE EFFECTS:

EYE: Molten material can damage eyes. Fumes can cause eye irritation.

SKIN: Molten material can cause severe burns.

INGESTION: Molten polymer will burn the internal organs severely.

CHRONIC EFFECTS: Prolonged and repeated inhalation of fumes may cause headaches.

TOXICOLOGICAL INFORMATION: Non-Toxic

SECTION 11 NOTES:

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: All hot melt coated yarns are manufactured without the intentional use of volatile organic compounds and/or hazardous air pollutants regulated by the EPA in the Clean Air Act Amendment of 1990.

SECTION 12 NOTES:

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of contents in accordance with local, regional, national and/or international regulations.

EMPTY CONTAINER: Dispose of container in accordance with local, regional, national and/or international regulations.

RCRA/EPA WASTE INFORMATION: No data available.

SECTION 13 NOTES: It is the obligation of each user of the product mentioned herein to determine and comply with the requirements of all applicable local, regional, national and/or international regulations.

SAFETY DATA SHEET

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DATE: 3/11/2016

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME: Not regulated as hazardous goods.

TECHNICAL NAME: No data available.

HAZARD CLASS: Not regulated as hazardous goods.

ID NUMBER: Not regulated as hazardous goods.

SECTION 14 NOTES:

SECTION 15: REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES:

FIRE: No.

REACTIVITY: No.

CHRONIC: No.

PRESSURE GENERATING: No.

ACUTE: No.

313 REPORTABLE INGREDIENTS: Refer to Section 2.

302/304 EMERGENCY PLANNING

EMERGENCY PLAN: No data available.

CALIFORNIA PROPOSITION 65: None.

SECTION 15 NOTES:

SECTION 16: OTHER INFORMATION

HMIS RATING	
Health:	0
Flammability:	1
Physical Hazards:	0
Personal Protection:	X*

* The customer is responsible for determining the PPE code for this material.

DISCLAIMER: The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Buyer assumes all risks from use, storage, and handling of the product in compliance with the applicable federal, state and local laws and regulations. EY TECHNOLOGIES MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, CONCERNING THE ACCURACY OR COMPLETENESS OF THE INFORMATION AND DATA HEREIN. EY Technologies will not be liable for claims relating to any party's use or reliance on information and data contained herein regardless of whether it is claimed that the information and data are inaccurate, incomplete or otherwise misleading. This information relates to the material designated and may not be valid for such material used in combination with any other materials.



Disclaimer:

The information given by this document is based on the best knowledge at the date shown. It is given in good faith.

Furthermore, user's attention is drawn to the possible risks run when the product is used for any purpose other than the one for which it was designed.

These SDSs do not exempt users from knowing and applying the rules regulating their activities. Users assume full responsibility for applying the appropriate safety measures when the product is used.

The specifications mentioned in these SDSs are only those of the manufacturers of the raw materials and no further testing was performed by Texonic.

The technical department