

SAFETY DATA SHEET

SDS IDENTIFICATION NAME: V-Wrap HM Carbon Fiber Fabric (High Modulus) **PAGE:** 1 OF 7

Product Group: V-Wrap C100HM, C200HM, C400HM, & C220B

DATE: 12/17/19

SECTION 1: IDENTIFICATION

1.1 Product identifier

Product name V-Wrap HM Carbon Fiber Fabric (High Modulus)

1.2 Other means of identification

V-Wrap C100HM, V-Wrap C200HM, V-Wrap C400HM, & V-Wrap C220B

1.3 Recommended use of the chemical and restrictions on use

Carbon fiber fabric used to reinforce structural elements.

1.4 Supplier's details

Name STRUCTURAL TECHNOLOGIES, LLC
Address 10150 Old Columbia Road
Columbia, MD 21046
USA

Telephone 410-859-6539

1.5 Emergency phone number(s)

CHEMTREC: 1-800-424-9300

SECTION 2: HAZARD(S) IDENTIFICATION

General hazard statement

The product is non-hazardous as delivered. All components of the product are strongly bound in a solid matrix. However, generation of excessive amounts of dust from the product is hazardous. The main hazards from dust generation are listed below.

2.1 Classification of the substance or mixture

GHS classification in accordance with: (US) OSHA (29 CFR 1910.1200)

- Eye damage/irritation, Cat. 2A
- Skin corrosion/irritation, Cat. 2
- Specific target organ toxicity (single exposure), Cat. 3

2.2 GHS label elements, including precautionary statements

Pictogram



Hazard statement(s)

H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation

Precautionary statement(s)

P261	Avoid breathing dust.
P264	Wash hands and exposed skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear eye protection/face protection/protective gloves.
P302+P352	IF ON SKIN: Wash with plenty of water
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with applicable Federal, State and local laws and regulations

2.3 Other hazards which do not result in classification

Carbon material is electrically conductive. Electrical systems should be protected from exposure to airborne fiber.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances – Not applicable

3.2 Mixtures

Components

Component	Concentration
Carbon fiber (CAS no.: 7440-44-0)	92-96 % (weight)
Epoxy sizing (CAS no.: 25068-38-6)	2-4 % (weight)

SECTION 4: FIRST AID MEASURES
4.1 Description of necessary first-aid measures

General advice Consult a physician. Show this safety data sheet to the doctor in attendance.
Move out of dangerous area.

If inhaled	After exposure to dust: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Call a poison center or doctor.
In case of skin contact	After exposure to dust: Wash with plenty of water for at least 15 minutes. Call a poison center or doctor if irritation develops or persists. Take off contaminated clothing and wash it before reuse.
In case of eye contact	After exposure to dust: Rinse cautiously with water. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
If swallowed	After exposure to dust: Call a poison center or doctor if you feel unwell. If

vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

If inhaled	May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
In case of skin contact	May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
In case of eye contact	May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
If swallowed	May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

No data available.

SECTION 5: FIRE FIGHTING MEASURES

- 5.1 Suitable extinguishing media** - Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- 5.2 Specific hazards arising from the chemical** - Hazardous decomposition products: Carbon oxides, nitrogen oxides.
- 5.3 Special protective actions for fire-fighters** Wear self-contained breathing apparatus for firefighting if necessary.
- Further information** - Carbon fibers are sufficiently conductive to cause severe electrical problems.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures** - Wear respiratory protection if necessary. Do not breathe dust or mist. Ensure adequate ventilation. For personal protection see section 8. Chopped or milled carbon fibers may be slippery if spilled.
- 6.2 Environmental precautions** - Do not let product enter drains.
- 6.3 Methods and materials for containment and cleaning up** - Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.
- Reference to other sections** - For disposal see Section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure adequate ventilation. Avoid dust formation. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. Protect all electrical equipment, in or near areas in which fiber is handled or used, from contact with airborne particles and filaments to avoid possible damage caused by electrical shorts. Airborne particles and filaments

should be controlled so as to minimize (1) skin irritation, (2) electrical shorts in switch gear, etc. due to conductivity of fiber.

7.2 Conditions for safe storage, including any incompatibilities

Keep in a dry and well-ventilated place. Protect electrical equipment from exposure to conductive carbon fibers to avoid electrical short circuits.

Specific end use(s) - Apart from the uses mentioned in section 1 no other specific uses are stipulated.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Particulates not otherwise regulated:

OSHA PEL 8-hour TWA		ACGIH® TLV® 8-hour TWA		Cal/OSHA PEL 8- hour TWA	
PEL-TWA	5 mg/m ³ (*15 mppcf) [respirable fraction], 15 mg/m ³ (*50 mppcf) [total dust]	TLV®TWA	3 mg/m ³ (respirable particles) and 10 mg/m ³ (inhalable particles)	PEL- TWA	5 mg/m ³ (respirable fraction), 10 mg/m ³ (total dust)

8.2 Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection - Safety goggles are recommended.

Skin protection - Wear protective gloves.

Body protection - Wear protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection - Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal hazards - No data available.

Environmental exposure controls - Do not let product enter drains.

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	Black solid
Odor	Odorless
Odor threshold	No data available.
pH	Not applicable.
Melting point/freezing point	No data available.
Initial boiling point and boiling range	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not flammable.
Upper/lower flammability limits	No data available.

Upper/lower explosive limits	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	No data available.
Specific gravity	1.75-1.85
Solubility(ies)	Negligible (Dispersible) in water
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity	Not applicable.
Explosive properties	No data available.
Oxidizing properties	No data available.

Other safety information

No data available.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity - Not reactive under normal use and storage conditions.

10.2 Chemical stability - Stable under normal storage conditions.

10.3 Possibility of hazardous reactions - Carbon fiber can react violently with strong oxidizers, such as fluorine.

10.4 Conditions to avoid - Avoid dust generation, avoid exposure to incompatible materials. Exposure to electrical equipment and circuitry.

10.5 Incompatible materials - Strong oxidizing agents.

10.6 Hazardous decomposition products - Carbon oxides, nitrogen oxides.

SECTION 11: TOXICOLOGICAL INFORMATION**Information on toxicological effects**

11.1 Acute toxicity - Based on available data, classification data are not met
Likely Routes of Exposure: Eye contact. Skin contact. Inhalation.

11.2 Skin corrosion/irritation - Dust may cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

11.3 Serious eye damage/irritation - Dust may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

11.4 Germ cell mutagenicity - No data available.

11.5 Carcinogenicity - Based on available data, no component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA, IARC and NTP.

11.6 Reproductive toxicity - No data available.

11.7 STOT-single exposure - Dust may cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

11.8 STOT-repeated exposure - No data available.

11.9 Aspiration hazard - No data available.

11.10 Additional information - No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity - No data available on product

12.2 Persistence and degradability - No data available on product

12.3 Bioaccumulative potential
No data available on product

12.4 Mobility in soil - No data available.

12.5 Results of PBT and vPvB assessment - PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects - No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal of the product - Disposal should be in accordance with applicable Federal, State and local laws and regulations. Local regulations may be more stringent than State or Federal requirements.

13.2 Disposal of contaminated packaging
Dispose of as unused product.

SECTION 14: TRANSPORTATION INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question

California Prop. 65 Components

WARNING: This product can expose you to chemicals including epichlorohydrin and phenyl glycidyl ether, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazards

Acute health hazard for dust exposure

SARA 313 Components

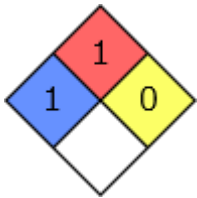
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

All materials or components of this product are either listed or are not required to be listed in the epa tsca inventory

HMIS Rating

V-Wrap HM Carbon Fiber Fabric (High Modulus)	
HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

NFPA Rating



SECTION 16: OTHER INFORMATION

16.1 Further information/disclaimer

Date of issue: December 17, 2019.

SPECIAL PRECAUTIONS: Empty containers will retain some of the product residue. When handling or disposing of them, follow all label warnings, other instructions and waste disposal procedures.

DISCLAIMER: Wherever such words or phrases as “hazardous,” “toxic,” “carcinogen,” etc. appear herein, they are used as defined or described under state employee right-to-know laws, Federal OSHA laws or the or the direct sources for these laws such as the International Agency for Research on Cancer (ISRC), the National Toxicology Program (NTP), etc. The use of such words or phrases should not be taken to mean that we deem or imply any substance or exposure to be toxic, hazardous or otherwise harmful. ANY EXPOSURE CAN ONLY BE UNDERSTOOD WITHIN THE ENTIRE CONTEXT OF ITS OCCURRENCE, WHICH INCLUDES SUCH FACTORS AS THE SUBSTANCE’S CHARACTERISTICS AS DEFINED IN THE SDS, AMOUNT AND DURATION OF EXPOSURES, OTHER CHEMICALS PRESENT AND PREEXISTING INDIVIDUAL DIFFERENCES IN RESPONSE TO THE EXPOSURE.

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